RESEARCH ON THE IMPACT OF CHINA'S POPULATION AGING ON RESIDENTS' CONSUMPTION

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6117195007

AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF BUSINESS ADMINISTRATION

GRADUATE SCHOOL OF BUSINESS

SIAM UNIVERSITY

2020

RESEARCH ON THE IMPACT OF CHINA'S POPULATION AGING ON RESIDENTS' CONSUMPTION

Thematic Certificate

To

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This Independent Study has been approved as a Partial Fulfillment of the Requirement of International Master of Business Administration in International Business Management

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Date 5/8/2020

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ABSTRACT

Title: **Research on the Impact of China's Population Aging on Residents' Consumption**

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Degree: **Master of Business Administration**

Major: **International Business Administration**

Advisor: .....

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3 / 8 / 2020

With the increasing economic and social development today, ageing population has existed in all countries worldwide and has become an irreversible trend in the 21st century. In 2016, China's elderly population over 65 years old had exceeded 150 million. As of the end of 2017, the number of people aged 65 and up surpassed 158.31 million, accounting for 11.4% of the total population. China has become the country with the largest number of elderly people in the world. According to surveys and studies, the number of people aged 65 and over in China has been increasing steadily in the past decade. In 2008, the year-on-year growth rate was 3.0%, while in 2017, the year-on-year growth rate had soared to 5.5%. China's national conditions are still in a lengthy primary stage of socialism， the economic foundation is relatively weak, productivity is not very developed. With this history, China's ageing population has shown its characteristics: "not rich," Minority", large base, fast speed, etc. Therefore, the continuous growth of the number of older adults in China will harm China's overall economic development.

In recent years, China's economic development momentum has been excellent. From 2013 to 2016, China's average annual growth rate was 7.2%, which was relatively high compared with the world average growth rate (2.5%) and other developing countries (4%) over the same period. This shows that China's economic strength was gradually increasing. In the past three decades, China's final consumption rate curve has shown a "U-shaped"; where, the consumption rate is relatively high at first, decreases, and rises again. It was only more than 40% when the consumption rate was the lowest. It slowly began to rebound in 2016; for example, the final consumption rate in 2016 has risen to 53.6%. From the perspective of China's economic development in the past thirty years, although consumption has also promoted economic progress, it was far from enough.

Based on the authors' literature research, the theoretical basis of the research in this article is elaborated. Then the population ageing and residents' consumption situation facing China at the present stage are separately stated, and their characteristics and future development trends are briefly summarized. Secondly, a simple model is used to make an empirical analysis of the relationship between ageing population and residents' consumption, and it is concluded that aging population will have a negative impact on Chinese residents' consumption, and use the gray correlation degree to analyze the impact of China's ageing population on various consumption structures of residents.

Keywords: Aging Population, Resident Consumption Level, Resident Consumption Structure, Old Age Dependency Ratio

摘 要

标题: 中国人口老龄化对居民消费的影响研究

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.....3...../.....8...../.....2020.....

在经济社会日益发展的今天，人口老龄化问题已经存在于世界各国，成为21世纪不可逆转的趋势。2016年时中国65岁以上老年人口已经突破了1.5亿。截止到2017年年底，65岁及以上人口数量已达15831万人，比重已经占据到了11.4%,中国已经成为 了当今世界上老年人口数量最多的国家，也成为了全球仅有的一个老年群体数量 过两亿的经济体。依据调查研究，中国65岁及以上人口数量近十年来一直在不断地增加，在2008年，同比增长速度还为3.0%,而2017年同比增速就已经飙升到了5.5%。中国现在仍处于社会主义初级阶段，经济基础比较薄弱，生产力并不发达。在这样的背景下，中国人口老龄化也表现出了自己的特点：“未富”、“少子”、基数大、速度快等。因此中国老年群体数量的持续增长将会危害到中国的经济发展。

近年来，中国经济发展势头良好。2013年-2016年，中国GDP年均增长率为7.2%,与同期的世界平均增长水平(2.5%)和其他发展中国家水平(4%)相比， 还算是比较高的，说明中国的经济实力在逐渐增强。近三十多年来，中国的最终消费率曲线变化呈现“U型”，就是消费率一开始比较高，而后开始下降,后来又开始升上来。消费率最低的时候才40%多,最近几年才慢慢开始回升,例如2016年最终消费率才刚升到53.6%。从最近中国三十几年的经济发展来看，虽然消费也推动了经济前进，做出了自己的贡献，但是还远远不够。

本篇论文首先是对前人的研究进行了简单整理，归纳分类了诸多著名经济学家的文献研究，在此基础上阐述了本文研究的理论基础，然后分别陈述了中国现阶段面临的人口老龄化和居民消费情况，并对其各自的特点以及未来的发展趋势做除了简要总结。其次运用简约模型对人口老龄化与居民消费之间的关系做了实证分析，得出人口老龄化会对中国居民消费产生负面影响，并进一步使用灰色关联度软件，分析了中国老龄化对居民各类消费构成的影响。最后，进行结论分析，并提出政策建议。

关键词:人口老龄化　　居民消费水平　　居民消费结构　　老年抚养比

Acknowledgments

My graduate student career is coming to an end and I am about to walk out of campus, which is really touching. In the two years of study and life, in addition to completing basic learning tasks, actively participating in various campus activities and carefully following the instructor to complete various projects, I have experienced an unprecedented fulfillment. On the occasion of graduation, I sincerely thank the people who have cared and helped me in my study life:

First of all, I want to thank my parents for their hard work, so that I still have the privilege of studying and enriching myself on campus at the age when I should be involved in social work. They have supported me silently for the past two years; second, I want to thank my mentor, He taught me how to learn, how to communicate and communicate with people effectively. I thought that I could only learn the theory of books in school, but the tutor gave me a surprise. He took us out of the campus and went to practice to confirm the knowledge learned, so that I understood how to effectively transform the theory for practice. In my opinion, this is a rare treasure than the theory in books. Then, I would like to thank the leadership of the college and my instructors and counselors. Whether they are studying or living, as long as they have problems to ask for help, they never push the building, but spare no effort to help me. The college provides a good platform for our graduate students. With the care and help of teachers, I have made great progress. Finally, I would like to thank the students who have accompanied me for two years. Usually, the students share resources and help each other, forming a good learning atmosphere. Special thanks to some of my friends who always comfort me and accompany me when I am frustrated.

On graduation, I sincerely wish my teachers and classmates who have helped me, and wish you all the best and a bright future!

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RESEARCH ON THE IMPACT OF CHINA'S POPULATION AGING ON RESIDENTS' CONSUMPTION

Chapter 1 INTRODUCTION

1.1 Research background and significance

1.1.1 Research background

In order to cope with the shortage of working-age population in China and the rapid deepening of aging, China officially opened the "second child" in 2016. At this stage, China's population development situation has undergone a turning point of change. One of the main manifestations is that population structural problems have become more and more prominent, and the working-age population required for economic transformation has begun to show a decreasing trend. With the opening of the "second child", the aging of the Chinese population is particularly obvious, and it has also received more and more attention from the society. According to China the fifth census data show that 65 years of age and over population has reached 8811 million, accounting for the proportion of the total population of 6.96%, 60 -year-old and above population of 1.3 million people, accounting for the proportion of the total population 10.2%. According to the international and China accepted criteria for the classification of the aging of the population - 60 years and 60 over the age of more than 10% or 65 years old and over 7% over 65 years old , it can be seen that in just ten years, China's aging has been rising at a rapid pace . However, compared with other countries, the rapid growth rate, relatively large scale, and the speed of modernization development are slower than the aging population, which is a unique feature of China's aging. That is, "get old before getting rich". And as China is aging intensified, is bound to the constraints of China and healthy development of the economy. However, while the economic growth rate continues to increase, it is accompanied by a serious shortage of national consumption demand and a declining consumption rate of residents.

In 2000, China 's GDP calculated by the expenditure method was 100577 billion yuan. By 2015, the GDP calculated by the expenditure method increased to 695.9594 billion yuan. This shows that China 's economic growth rate is indeed very fast. And according to the total GDP calculation, China 's rising economic strength jumped to second in the world, but the final consumption rate is from 2000 year 63. The 3% decline to 51.6 percent, down nearly 12 percentage points. According to the contribution rate of China's economic growth factors, China 's previous economic growth was mainly driven by imports and exports and investment, but consumption in parallel with imports, exports and investment has been sluggish. At present,

consumption has become China 's first driving force for economic growth, but it is far from enough. Specifically, per capita consumption expenditure in 2016 was 17,111 yuan. By 2017, the per capita consumption expenditure of Chinese residents had reached 18,322 yuan. Nominally than 2016 growth of 7. 1 percent, but then the price factor deducted, actually increased 5. 4 percent. But this time is still far below the world level in 2016. And as of 2016, compared with foreign countries, the final consumption rate of Chinese residents was only 53.6%. According to research, as early as 2013 , the final consumption rate of the United States had reached 69.2% , and Japan had reached 61.6% , even India, which has a similar situation with us, has a consumption rate of 61.8% , Thailand in Southeast Asia also reached 53.7% in 2013 , and even the final consumption rate in South Africa in Africa is 61.2% . China's current final consumption rate in 2016 is actually not as good as those of those countries that were in 2013 three years ago. It can be seen from this that the low consumption rate of residents will lead to insufficient domestic demand, which in turn will affect the stable development of the economy. China To deal with this in today's international economy, promote sustainable economic development, improve the level of consumption it is very important.

In fact, as of now, there are many documents that have made a lot of discussions about the reasons for China's insufficient demand, and there are many angles of discussion. Some scholars believe that residents prefer to save in advance, because the current Chinese economic structure is in transition, various aspects of the social security system is not particularly perfect, most of the people may feel that the future regardless of income or expenditure there is great uncertainty ahead Doing a good job of saving may be a very good choice, but it also reduces consumption at the current stage. So, it is whether the aging of the population will have a negative effect on the consumption of residents. Therefore, this article discusses the problem of resident consumption from the perspective of population aging.

1.1.2 Research significance

The aging process is gradually accelerating, and many social and economic problems are exposed to people. The problem of aging population has become a hot spot for scholars. Many scholars have started to study the problem of population aging, but in most studies, the problem of population aging is regarded as the problem of pension. In fact, the problem of population aging is not the same as the problem of old-age care. The change in the age structure of the population will trigger changes in almost all socio-economic activities with people as the main body. It involves all aspects of social and economic development, and its impact is far greater than " The problem of "care for the elderly" is more profound. China is in a critical period of transforming its economic development mode, expanding domestic demand, and turning to consumption to promote sustained economic growth. Studying changes in the consumption structure has important practical significance for promoting economic growth.

Since China's population aging problem shows characteristics such as large scale, rapid development, and aging that are different from the population aging problem of developed countries during the same period, under the special national circumstances, the study of the impact of population aging on China's consumption structure The impact will greatly help the formulation of relevant public policies. By grasping the changes in people's consumption needs in the context of a special age structure, the government can promptly guide manufacturers to adjust the supply structure according to changes in the consumption structure and promote a virtuous cycle of the national economy. At the same time, before the peak of population aging, the government can take precautions and take active measures to meet the challenges of population aging, so as to minimize its negative impact on the economy, and also grasp the characteristics of the impact of population aging on the industrial structure and economic structure. Force the industry to optimize and upgrade and promote economic development.

1.1.3 Practical significance

First, consumption is one of the important driving forces driving economic growth, and now it has become the first driving force in China, and the resident consumption rate is a very important component of a country’s final consumption rate. For other countries, the relatively low resident consumption rate has a bad impact on China's economy. It is clear from the study that the impact of the increase in the number of elderly people on the consumption of residents is very beneficial to the transformation of the Chinese economy. Second, this research is very beneficial to the development of the elderly industry, improve the pension system, and improve the social security system. So far, China has become the country with the largest number of elderly people, and it is also one of the fastest aging countries. With the continuous development of the economy and the continuous improvement of the people's living standards, the consumption needs of the elderly groups in all aspects are increasing, and the potential of the elderly market is becoming increasingly apparent. To this end, we should reasonably and properly tap the potential of the elderly market to promote the sound development of China's economy; because there are more and more elderly people, but the working-age population is steadily decreasing, which means the maintenance of young people now and in the future The burden is getting heavier. Studying the impact of the increase in the elderly population on consumption can allow us to better understand the consumption and savings of the elderly group, allow more classes and people to pay attention to the elderly group, and help formulate more and better social security policies that can make the elderly have Dependent.

1.2 Research content and methods

1.2.1 Research content

This article mainly studies the impact of China's aging population on residents' consumption, for which theoretical explanation and empirical analysis are carried out. First, on the premise of briefly elaborating many documents and theoretical foundations, the current situation of aging in China and the current situation of consumption are described. Then, a simple empirical model is used to study the specific relationship between population aging and residents' consumption. The grey relational degree method analyzes the impact on various types of consumption. Finally, an analysis and summary are made.

1.2.2 Research method

(1) Literature research method. The question or hypothesis proposed by the literature research method refers to the idea of analyzing and reorganizing the relevant literature or reclassifying the research based on the existing theories, facts and needs. Collect and sort out the previous research, sort out the contributions and shortcomings of the relevant research by domestic and foreign scholars, and combine with the actual situation to provide a theoretical basis for the research of this article.

(2) Qualitative analysis method. Qualitative research is the basis of quantitative research the qualitative research method is a method or angle to study things according to the attributes of social phenomena or things and the amount of contradiction changes and internal regularity in movement. The method is based on a generally recognized axiom and set of things. In this paper, the classical population and consumption theory is used to qualitatively analyze the correlation between population aging and residents' consumption, and the theoretical mechanism of population aging on consumption structure is sorted out.

(3) Quantitative analysis method. Quantitative research refers to the stipulated scientific research that determines a certain quantity of things, that is, the research methods and processes to analyze the problems and phenomena in quantity, and then to analyze, test, and explain, so as to obtain meaning. The main methods of quantitative research design are survey method, related method and experimental method. This article first quantitatively analyzes the relationship between population aging and residents' consumption, and then uses gray correlation analysis to study the correlation between the two, and finally draws a conclusion.

Chapter 2 LITERATURE REVIEW

This chapter mainly summarizes and summarizes some relevant documents at home and abroad, and briefly summarizes them to provide the basis and ideas for the next theoretical research and empirical research.

2.1 Research on consumption function

The research on consumption function is the foundation of analyzing consumption economic theory. Consumption is the basic element of the national economy, and the impact of consumption is to a certain extent related to the growth of the entire economy and the stable development of the macro economy. In the era of lack of material plaque, consumption will be subject to various restrictions, and the impact of consumption will also be limited. However, in the era of material abundance, the contribution of consumption expenditure to GDP exceeded more than half, so macroeconomics regarded consumption as the top priority in research. The research on consumption is mainly based on the research on the influencing factors of consumption. Among them, the most important factor influencing consumption is income level. Therefore, studying consumption from the perspective of income is the starting point of many economists. The absolute income hypothesis proposed by Keynes in the United Kingdom believes that consumption is only related to absolute income and increases with income. Subsequently, the economist Dusenberry proposed a hypothesis different from Keynes's hypothesis, namely the relative income hypothesis. According to the theoretical point of view, consumption is not related to absolute income, but to relative income, that is, people's consumption will be affected by those around them, or by their own past consumption. In addition, Modigliani proposed a life cycle hypothesis different from the Keynes and Dusenberry theory. The hypothesis believes that people will reasonably arrange their income and consumption in their lifetime to maximize utility. Since then, Friedman has also proposed a consumption theory that is different from the above three, namely the lasting income hypothesis. According to theory, both income and consumption can be divided into temporary and permanent. Among them, only sustained consumption is related to sustained income. Finally, Liland's preventive savings hypothesis, which introduces uncertainties into the consumption function, believes that based on uncertainty about the future, people will increase preventive savings, thereby reducing consumption. The five consumption hypotheses are specifically described below.

2.1.1 Case's absolute income hypothesis

According to the absolute income hypothesis of Keynes, consumption is determined by income, and will increase with the increase of absolute income. The decrease of income will

lead to the reduction of consumption. In addition, with the increase of income, the increase of consumption is Diminishing. It is mainly reflected in that the increase in consumption is lower than the increase in income. Generally speaking, when the income is lower, people have more desire to consume. And as income continues to increase, as the desire is satisfied, people consume Desire will slowly decrease. Therefore, Keynes's consumption function can generally be expressed as: $C_t = \alpha + \beta Y_t$. Ct represents consumption expenditure in period t, and Yt represents income level in period t; a represents spontaneous consumption, that is, when there is no income , Also must be carried out consumption expenditure; Q represents the marginal consumption propensity, that is, the income increases by one unit, how much the consumption increases. Among them p is in the range of 1. to 1, and as Yt continues to increase, p continues to decrease, which is the marginal consumption propensity Decreasing.

2.1.2 Dusenberg's relative income hypothesis

The relative income hypothesis of J.S.Duesenberry believes that consumption will be affected by relative income and has nothing to do with absolute income. This is fundamentally different from Keynes's consumption theory. The hypothesis is as follows: First, the demonstration of consumption Effect: People's consumption will be compared with the income and consumption of those around them. Especially for low-income people, due to their improved social status and blind comparison, they will be on par with the high-income people around. Maintain higher consumption. Second, the "rigidity" of consumption: consumption will be affected by past consumption, especially during peak periods. When there was higher consumption in the past, although current income has fallen, in order to maintain the original consumption level, There will be higher consumption. Third, the ratchet effect of consumption: In the short term, in order to maintain the original consumption level, when the income of consumers decreases, consumers will still have a higher expenditure. When the income of consumers has increased compared to before, consumption will have a greater increase. This phenomenon is called the ratchet effect of consumption.

2.1.3 Fried's sustained income hypothesis

Friedman's long-term income hypothesis believes that residents' consumption levels are only related to long-term income. According to the hypothesis, income can be divided into permanent income and temporary income. Among them, durable income refers to the income that can be expected to be maintained for a long time, such as wages and so on. Temporary income is temporary accidental income. Such as the accidental lottery, or the legacy bequeathed by relatives and friends, etc. Hypothesis believes that consumption is composed of permanent consumption and temporary consumption. Among them, long-term consumption refers to the long-term consumption that can be expected, such as the consumption of daily necessities.

Temporary consumption refers to temporary, irregular consumption, such as donation activities organized by the unit. The hypothesis believes that only sustained consumption is related to sustained income. There is no correlation between the remaining temporary consumption and sustained income and consumption. Consumption is determined by lasting income in a lifetime.

2.1.4 Modigliani's life cycle hypothesis

The life cycle hypothesis of F. Modigliani believes that people will reasonably allocate the total income they obtain in each stage of life to maximize its effectiveness. Therefore, consumers' consumption has nothing to do with current income or relative income, but is determined by lifetime expected income. According to the hypothesis, human consumption behavior is a forward-looking behavior. In the early period of life, that is, in the childhood period, people have no income, need parental support, and only consume. This period is a period of negative savings. In the middle of life, that is, in the youth, people can earn income through labor at this time. On the basis of their own consumption, raising children, and supporting the elderly, they will save so that they can consume in the future. At this time, income is greater than consumption, which is a period of positive savings. In the later stages of life, that is, in old age, people have no source of income at this time and can only rely on savings in their youth to consume. The life cycle hypothesis implies the relationship between population age structure and consumption. Once the population structure changes, that is, the proportion of the children's population, working population, and the elderly population changes, the overall consumption structure and consumption tendency will also change, resulting in changes in the total population's consumption. According to theory, the proportion of children and the elderly as a pure consumer population is large, and the consumption of the total population will rise. On the contrary, if the working population accounts for a large proportion, the consumption of the total population will decrease.

2.1.5 Liland's preventive savings hypothesis

Liland's preventive savings hypothesis introduces uncertainties into the consumption function, thereby improving the selection behavior of intertemporal consumption. Preventive saving refers to the behavior of saving under the uncertainty of the future situation. The preventive hypothesis believes that people generally make preventive savings to prevent future uncertainties in order to reduce losses. Among them, the greater the uncertainty, the more consumers are inclined to make a part of their savings to make up for the loss of uncertainty that may be caused in the future. Generally speaking, when there are uncertain expectations about the future situation, the utility of future consumption will be greater than the utility of current consumption. The greater the uncertainty in the future, the higher the marginal utility of future consumption. The more sexual savings, the less consumption.

Of course, there are many related researches in China. This includes not only the practical verification of foreign consumption theories by some scholars, but also the domestic scholars' own creation and construction based on China's national conditions. These are the following: Yuan Zhigang, Song Zheng (2000)， Zhu Guolin(2002) ,Wang Yupeng(2011),the hair root, Sun Wufu, Hong Tao(2013) ,Liu Xiaolan(2014) and so on.

2.2 Research on Population Aging and Resident Consumption

In the related research abroad, the earliest is the life cycle hypothesis. On this basis, Modigliani came to the conclusion: the aging population and household savings are negative correlation, so the consumer is positively correlated, meaning that the higher the age, the higher the rate of consumption. Leff (1969) has been the use of a 74 -section data countries studied empirical model, but the result was unsatisfactory. The reason for his failure is obvious, because although he uses a lot of data, he has forgotten these more than 70 countries. Each country has its own peculiarities, and has its own national conditions. The calculations together will inevitably lead to problems in the results. Therefore, in view of Luff's experience and lessons, some scholars no longer generalized many countries, but divided them into categories and discussed them separately. For example, Capoda and Adame (1971) finally came to a conclusion different from Modigliani: there is no significant relationship between the increase of the elderly population and the consumption of residents. There are also some scholars based on life cycle theory, adding some corresponding factors for research. For example, economist Haque N. U (1999), after adding caution and bequest motivations, concluded that an increase in the elderly population will not only inhibit consumption but will increase consumption. Wilson (2000) using time series data for the Australian and Canadian empirical research, concluded: no relationship between the two aging and the consumer. Demery and Duck (2006) used British data and analyzed the relationship between aging and consumption using a cointegration regression model, but believed that the national data of the United Kingdom could explain the relationship between aging and consumption. Hoch,H Weil,D.N(2006) view is that: the number of declining labor force, the future of the labor force of the original investment may be reduced, the corresponding consumption will rise; if a deeper level of aging caused by reducing the degree of consumption When the consumption increase caused by the decrease in the number of teenagers is lower, the per capita level of consumption will rise, and vice versa. Midori Wakabayashi (2008) conducted a research and analysis on Japan and mainly believed that Japanese households' consumption expenditure after retirement decreased, that is, the elderly population is inversely proportional to the consumption rate. Some foreign scholars have also found that there is a positive correlation between the elderly population and the consumption rate by studying the data of our Asian developing countries. For example, Charles YuJi, Horioka and AkikoTerada-Hagiwara (2012) mainly used 12 Asian countries

from 1966 to 2007.Calculated by national data.

Compared with foreign countries, Chinese research on aging time of late, Chinese scholars in 20 began to realize the importance of this academic problem seventies and eighties. Zou Cangping's(1987) book "Talking about Population Aging", which is relatively early in discussing the subject of population aging, mainly elaborated on the impact of population aging on economy and society, and also put forward corresponding policy recommendations: Yes By expanding the elderly market and stimulating the consumption potential of the elderly population, the negative impact of the increase in the elderly population will be alleviated. Since then, Chinese scholars have conducted many studies: Yuan Zhigang, Song Zheng(2000) believes that since 1975 years later, after a study on population age structure is affecting China a very important factor in urban household savings and consumption; both of The study mainly deals with the relationship between the elderly population and residents' consumption. Liu Yongping, Lu Ming (2008) based on the analysis of the predecessors, to analyze the iterative model theory to study the elderly group and consumption. Their analysis showed that: even if the savings will be the impact of aging, the elderly population increases do not necessarily lead to slow economic development, because the aging population is increasing likely to invest in education of their children but also with the increase. Wang Sen (2010) used the data from 1978 to 2008 in China, and did not consider the explanatory variables introduced by Li Wenxing and others, but re-selected relevant variables such as inflation rate, nominal interest rate, elderly dependency ratio, etc.as explanatory variables to establish empirical evidence. model to study results: the rate of inflation and nominal interest rates would generate consumption rate is relatively large positive impact, the impact is relatively old age dependency ratio is relatively small only 1 percentage point. Therefore, he believes that there is no significant relationship between the two. Yang Jijun, Zhang Erzhen (2013) study suggests that: the elderly population is not necessarily more inclined to save, so when the elderly population increases, the result is a reduction of savings; no family planning policy, will not solve the current problems; in order to promote consumption, the best The approach is to implement measures such as improving the pension system and delaying the retirement age. Zhu Qin, Wei Tao far(2016) found that: in China, due to the different population ages, the consumer will also have differences, but the difference between urban and rural areas is still very obvious; assuming that the consumption of urban and rural residents in the age structure remains unchanged, nearly 40 or so years, the rapid increase in the elderly population will not have the absolute amount of consumption produce a very significant effect; aspects of the consumption structure has some different; while China rapid development of urbanization will boost consumption.

2.2.1 Population aging has a significant positive impact on residents' consumption

Wang Yupeng (2011) conducted a study based on the intertemporal optimal consumption theory and believed that the average dependency ratio of elderly dependency ratio was significantly positively correlated. In addition, actual disposable income, current prices, etc. will have an impact on consumption. The stability of consumption is also a characteristic of residents' consumption. Gong Xu, Li Rui, Yang Zhiming et al. (2012) used the data from 1995 to 2009 to estimate fixed effects, dynamic GMM models, and differential GMM models, and compared the estimated results. The study believes that under the premise of a perfect social security system, the elderly population will release their spending power, thereby promoting consumption. Inflation rate has little effect on rural residents' consumption, and rural residents have consumption inertia. Xiang Jing (2013) analyzed the impact of aging population on consumption from the perspective of urban residents. The study used various types of consumption data of urban residents in 31 provinces in China, and used the most commonly used extended linear expenditure system to study consumption structure. From the conclusion point of view, the increase of the total social dependency coefficient will promote the residents' basic living expenses. Increasing the old-age dependency ratio of the population will certainly increase the expenditures on consumption such as medical care, but at the same time it will squeeze other expenditures such as transportation, communications, entertainment and culture. Hu Naijun, Yang Yansui, Yu Sen (2014) introduced the concept of standard consumers and standard incomers, brought the age structure of the population into the consumption function model, and derived the conclusion through the method of mathematical model derivation. The conclusion shows that the aging of the population will not have a negative impact on the per capita consumption level of residents, the premise is that the consumption ratio of the elderly population and the working population is greater than the income ratio of the two. Yin Junru, Xu Haoyi, Ni Xuanming(2016) based on the CHARLS 2013 national survey data, the study found that: family economic status and household consumption expenditure have a positive correlation, that is, high household income will make consumption level high; while age and consumption level The relationship is just the opposite, but it does not have a significant performance among the elderly.

2.2.2 Aging population has a significant reverse impact on residents' consumption

Yu Yang, Qiang Qiang, Wang Yatong and others (2015) believe that aging will inhibit consumption. Using the method of cointegration theory, empirical research was carried out using time series data from 1980 to 2012. The study believes that residents have bequest motivations and will have a negative impact on consumption. In addition, the old-age dependency ratio will inhibit residents' consumption. Li Chunqi and Zhang Jieping (2009) used

China’s 30-year macro data to analyze the impact of population structure on consumption on the basis of maximizing the utility function by adding population age structure factors to the utility function. The results of the study show that under the dominant role of bequest motivation and future uncertainty motivation, an increase in the old-age dependency coefficient will lead to a reduction in farmers' consumption. Wang Jinying, Fu Xiubin and others (2006) added the age structure element of the population, that is, the concept of introducing standard consumers into the Chinese consumption function to study the impact of aging on consumption. The results show that the dependency ratio of the elderly population will inhibit the growth rate of consumption levels, and aging will inhibit consumption. The innovation of the article lies in the establishment of a consumption function that includes a population structure, which has also played a fundamental role for many future studies. Huang Mingqing and Nie Gaohui (2015) selected the panel data from 2002 to 2013, co-integration test, and causality test of various provinces in China by constructing a consumption function with old-age dependency ratio. The results show that aging will lead to a reduction in income, which in turn will lead to a reduction in residents' consumption. In addition, the study divided the country into three regions: eastern, central, and western regions. Population aging has a positive relationship with consumption in the eastern region. However, it has an inverse relationship with consumption in the central and western regions. Wei Cai Yong (2017) using the 2005-2013 annual Chinese 31 data provinces were simple empirical analysis, concluded that: the aging population will cause the consumer significantly negative impact. Wang Sen (2010) also made an empirical study on the relationship between China's population aging and residents' consumption. The article uses the ratio of old and young as the representative variable of aging, and uses the time series data from 1978 to 2008 to do an empirical study on China's aging, per capita income and residents' consumption. The results show that there is a significant correlation between per capita consumption and the ratio of old to young. And the VAR model shows that the relationship between the ratio of the oldest to the youngest in China and the consumption is not static. According to different national conditions in China, the influence of the ratio of the oldest to the youngest on consumption is also different.

2.3 Research on population aging and residents' savings

In a person's adult life, the flow of money earned basically has two aspects: either consumption or savings. Therefore, household savings and consumption have a trade-off relationship.

In terms of population aging and household savings, foreign scholars have conducted relatively extensive research. Samuelson (1958) and Nether (1971) proposed a household savings demand model: the number of children in a family has the same function as the family’s savings, and it is also believed that whether it is qualitative or quantitative, The number of

children and savings can be replaced and complemented each other. This means that if the number of children in a family is relatively small, each child will receive more input, which will increase consumption and vice versa. Loew (1969) found through data research and analysis of multiple countries: deepening aging will reduce savings. Paul Schultz (2005) used data from 16 Asian countries to find a negative correlation between population age and savings rate. Although he emphasized that it is limited, it supports the life cycle hypothesis to a certain extent. After investigating and researching parts of the United States, Robert L. Clark and Yoseph John Spengler believe that: from the perspective of government expenditure, the support expenditure of the elderly group is several times more than that of children; but children will later Become a working-age population, thereby promoting economic development and increasing national income, and the elderly group is just a consumer group. If the elderly group increases, it may have a negative impact on the future national income growth rate, thereby reducing consumption. Modigliani and Cao (Modigliani and Cao, 2004) studied and analyzed China's savings data from 1953 to 2000 based on life cycle theory, and concluded that demographic change was one of the main reasons for the high savings rate in China at that time. However, some scholars later overturned this conclusion through analysis, because many Chinese residents were forced to save before 1978. In this case, this conclusion is unreliable. Kraay (2000) uses TSLS as an empirical conclusion and concludes that there is no obvious relationship between the dependency coefficient and the savings rate. Charles Yu. ji and Horioka (2010) conduct an empirical analysis of the aging and savings of the Japanese population: Japan’s the number of elderly groups and the number of labor force populations are declining, and the elderly groups prefer to consume rather than save. Charles Yuji, Horioka and AkikoTerada-Hagiwara (2012) study part of Asian countries from 1996 to 2007 and concluded that people in Asian countries prefer Savings, but the reasons are different because of the specific country; the age difference of the population and the level of economic development are related; the increase of the elderly population will reduce the savings of residents.

On the domestic side, Yuan Zhigang and Song Zheng (2000) found through empirical research that the age structure of the population has a certain relationship with people's consumption habits. The elderly group prefers to save rather than consume. In other words, the increase in the elderly population will reduce the consumption rate and increase the savings rate. Ten years later, Su Chunhong (2010) once again studied whether the savings rate is related to the age structure of the population through the Lough empirical model. The study found that under the economic conditions of the time, the increase in the elderly group would increase the resident savings rate of the entire society. In 2016, Ma Hongbin's research believes that although China's elderly dependency ratio will reduce the household savings rate, it is not very significant. Jingjing Li (2016) uses panel correction standard error (PCSE) and feasible

generalized least squares (FGLS).

Based on the data of Chinese provinces from 1989 to 2014, research was conducted and many new indicators were added to the article, such as the sex ratio of the population, life expectancy, etc., and finally the results were obtained: in the long run, the increase in the elderly population will not only increase savings, but it will even Reducing savings means increasing the consumption rate. In 2017, You soldiers and Cai Yuanfei used the panel vector autoregressive (PVAR) model to conduct empirical analysis using data from 2013 and the previous 14 years, and came to a conclusion contrary to previous research: an increase in the elderly population will not reduce savings. On the contrary, it will increase savings, in other words, it will have a negative effect on consumption. In the long run, it will not be conducive to the sustained and healthy development of the economy.

2.4 Summary of this chapter

Can be drawn from a review of domestic and foreign relevant theories above, from the 20 century,20,30 years now, there are many domestic and foreign consumption theory of consumer conduct research and analysis, and on the analysis of angle also from many aspects, on population The influence of factors on residents' consumption has also received more and more international attention. But no matter which study you look at, except for the difference in research data and research methods, the conclusion is not unified. There are also different results in the study of significant relationships: some empirical evidence shows that the two are positively related, some believe that the two are negatively related, and even conclude that the two are intertwined by the government influences. There is still a great uncertainty as to whether there is a significant relationship between population aging and residents' consumption, and what is the specific relationship. This paper uses time series data to conduct an empirical analysis of the resident consumption rate, determine the relationship between population aging and resident consumption, and use the gray correlation model to use the elderly dependency ratio as the reference sequence to study the increase in the number of elderly populations. The impact of residents' consumption.

Chapter 3 METHODOLOGY

This chapter is mainly to sort out the theoretical aspects, first introduce the demographic transition theory, and then sort out the theories related to the theme of this paper. The content of this chapter is mainly for the future discussion.

3.1 Population transition theory

Demographic transition theory is one of the main theoretical demographic West, in 1930 was born later. After 1970, many developing countries applied this theory to study the demographic transition. Initially, when statistically analyzing population data in Western countries, they studied the different stages of population development and summarized and predicted the laws of population development and possible future trends. Simply put, demographic transition refers to the periodic change of population from one phenomenon to another over time. The theory of population transition refers to the theory formed in the process of changing from the traditional mode of reproduction to the type of modern population reproduction.

Landry, a French economist of the population, for the first time put forward the concept of demographic transition. Landry divided the population development into three stages: primitive, medium and modern. After this, Landry once again mentioned the three stages of this theory in his book "Population Revolution", and elaborated in detail:

(1) The original stage. At this time, the society and economy were underdeveloped and living conditions were very difficult. There are no restrictions on how many children can be born. The factors that determine how many children are born and how many dies are mainly due to the earlier marriage customs and whether they can solve the problem of food and clothing.

(2) Mid-term stage. As people's living standards and ideological concepts gradually improve, many families choose to marry late and have children, and even infertility, which significantly reduces the level of fertility at this stage.

(3) Modern stage. At this stage, there were "two lows", namely birth rate and low mortality rate. The reason is not difficult to understand. In the modern stage, productivity has developed to a certain height, people's economic level has been considered relatively high, the improvement of economy has led to the improvement of residents' education level, the radical transformation of ideas, people will take the initiative to control themselves The number of children born, combined with the improvement of medical and health conditions in the modern

stage, led to a significant reduction in infant mortality, so the "two lows" situation occurred. Landry's research is mainly on demographic data of France, considering other countries' respective national conditions and other reasons, so the theory may not be mature, but it has also played a good role in paving the way for the theoretical research on population transformation.

American demographers Thompson(Warren Thompson) in Landry concept based on, also thought the demographic transition did some in-depth research.1929 ,he published "population", whose main content is to Landry's thoughts range of applications To expand and deepen the analysis, the theoretical analysis scope is other countries in the world outside Europe. In order to correspond to Landry's three-stage theory, Thompson divided the countries in the world he studied into three types of regions:

(1) Countries with "two highs" and some underdeveloped countries in Asia and Africa have high birth and death rates.

(2) Countries where infant mortality has declined, such as Italy and Spain.

(3) Western European countries where fewer babies are born. Thompson in the study, because some social and economic factors such as population changes are not considered, but only the scope of Landry 's theory is expanded, the research conclusions obtained are not perfect.

With the progress of economy and society, the research on population-related theories has attracted more and more attention from academia, and many scholars have studied and perfected it, such as Leibenstein (1974). But their conclusions are generally consistent, and the conclusions reached are that economic development has promoted population changes.

3.2 Relevant theories of population age structure affecting residents' consumption

3.2.1 Life Cycle Theory

(1) In the 1950s, Modigliani and Blumberg published "Utility Analysis and Consumption Function: An Explanation of Cross-sectional Data". In this work Modigliani and Brumberg co-founded and proposed the theory of life cycle. The premise assumes that consumers in real economic life are rational economic people. In order to maximize utility, they will plan their consumption and savings more rationally. Current income is not the deciding factor, because when the consumer does not work in the later period of his life, then what is supporting consumption at that time is saving, so all the income of the consumer's life is the main

determinant.

The premise of the establishment of life cycle theory assumes that the consumer’s total labor income in his life constitutes his income constraint: consumers have their own plans for their consumption routes, which is a relatively rational behavior subject; savings is actually for consumers There is no direct effect. In order to maximize utility, consumers only use savings as a smoothing means to evenly distribute their lifetime income.

The length of consumers' working hours, the life cycle characteristics of income, and the strength of liquidity constraints are three key points that affect a person's consumption behavior in life cycle theory. Young consumers, because they have just started working, have short working hours and low income, and then as their age increases, their income begins to increase and gradually increase to the peak. With the increase of age, their income begins to decrease continuously until their income drops after retirement. The amplitude becomes larger or even drops to zero. Consumers, as a rational subject of behavior, in order to balance their life-long consumption status, when consumers have relatively high income when they are young, they will make more savings and prepare for the future; if consumers’ life expectancy remains unchanged, then The sum of the time allocated to work and retirement in this life is fixed, and the relationship between the time required for work and the time required for retirement will be formed, so when the consumer increases the working time, the retirement time will decrease, and the consumer will maintain the future The post-retirement consumption expenditure will also be reduced accordingly, and the consumer reserve deposits will not be as much as the original. On the contrary, if the working hours are reduced, the retirement time will be increased accordingly. In order to cope with future consumption expenditures, consumers will increase the current stage Savings; liquidity constraints. When the liquidity constraints are strong, consumers will be more willing to increase savings and reduce current consumption. When the liquidity constraints are weak, consumers may have less incentive to save.

The most important point of view of life cycle theory is that consumers' consumption expenditure mainly depends on the expected total income of consumers in their lifetime, not just the current income. The relative income of the consumer in the life cycle stage is the only factor that affects the propensity to consume. The two are in the opposite direction. For example, in the life stage with relatively high income, the propensity to consume is relatively low, because consumers want to smooth During its lifetime consumption, it is necessary to reduce consumption and increase savings. Life cycle theory assumes that consumers will consume all their wealth in the entire life cycle, and will not leave anything.

The following figure is Modigliani 's simple prediction of a person's lifetime savings.

When anyone starts working, there is basically no accumulation of funds. Then he will increase his assets and increase his savings by taking part in work, and then consume all his savings from retirement to the end of his life. The following figure 3-1, reflects the consumer's life in income, consumption and savings.

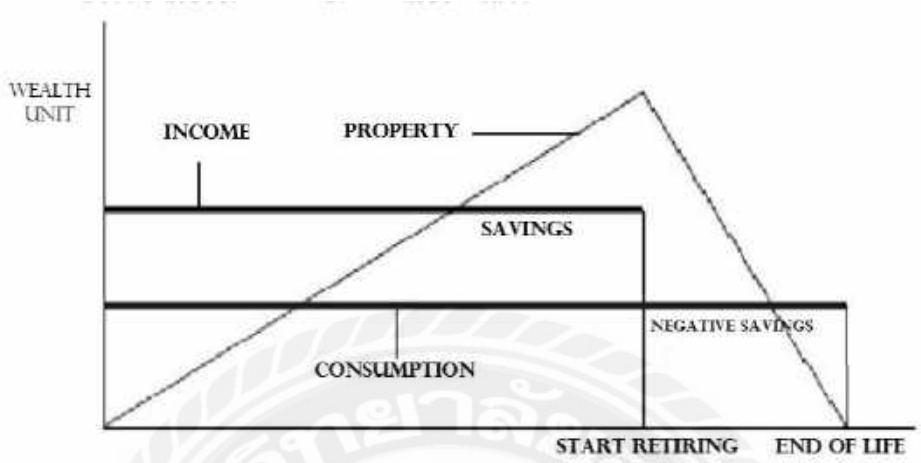

Figure 3-1 Income, consumption and savings in the life cycle

Therefore, from the perspective of a single consumer and from the perspective of the whole society, each consumer individual will have different differences in different life cycle stages. The general, the marginal propensity to consume of the whole society and long-term residents also are relatively stable.

The life cycle hypothesis believes that consumer consumption has no major impact on current income, and its theoretical basis is the ultimate goal of consumers to maximize their utility. Therefore, concluded that: the elderly population dependency ratio rises, or juvenile dependency ratio rises, the household consumption rate will rise; on the contrary, the number of elderly population and reduce the number of juvenile population decline, the next people to reduce rates.

3.2.2 Generational overlap model

In 1958, the famous economist Samuelson first proposed the generational overlap model in the study of population age and residents' consumption. In 1965, Diamond (1965) based on the analysis of Samuelson's theory, made a certain extension of the generational overlap model. The model assumes that everyone in an economic society has a time limit. If an individual survives in youth, at this point in time, the young people of this era and the old people of the previous era exist at the same time, and the time intersects. Stacking, so that when the older generation gradually ages to the end of life, at this time there will also be a new younger

generation to enter the society for replacement. The model assumes that life is divided into different generations, and consumers are based on age.

When dividing the era, there will be differences in the consumer behavior of individual consumers, and it is believed that the difference in age will cause differences in consumption. Different ages and different generations will lead to different final individual consumer behaviors and marginal consumption trends. In an economy, people of different ages, people of different generations, and even people of the same generation are widely connected, and the economic exchanges between them are intricate. But also positive because of this, this theory is more fit the actual, in order to better apply to the real world to study and analyze how different people have different ages of consumer differences.

3.3 Summary of this chapter

In summary, the impact of an aging population for the consumer also has had a lot of uncertainty. There are some theoretical results are an aging population and household consumption are negatively correlated, but there are some theoretical conclusions but it is the contrary, there is some conclusion is not correlation between the two. Therefore, the impact of China's aging population on residents' consumption also requires us to use our current national conditions and current situation for further detailed research and discussion.

Chapter 4 RESULTS

Based on theoretical analysis, we conclude that there is indeed a certain relationship between population aging and resident consumption, then the next chapter will specifically introduce the current situation of China's population aging and resident consumption, understand the reality of China, and provide empirical evidence for the next step Test to make a good preparation.

4.1 China's population aging situation

4.1.1 Analysis of China's population aging

According to United Nations standards, China in 2000 when he was 60 years old and above on the proportion of the population had reached 10.2%, explained at that time China has formally entered the aging society. Figure 4-1 , we can see that the rate of aging in many developed countries and China is not long compared to most countries, the aging process times are decades or even up to one hundred years, such as the aging French The aging process is 115 years, the aging process in Switzerland is 85 years, the United Kingdom also took 80 years to enter the aging society, and the United States also spent at least 60 years to enter the aging stage. Come back to see China's aging process, found that China only took 18 years (1981-1999 years) it has entered the aging society. But China when not only the aging process with relatively short, and fast. So far, the speed of aging has been accelerating.

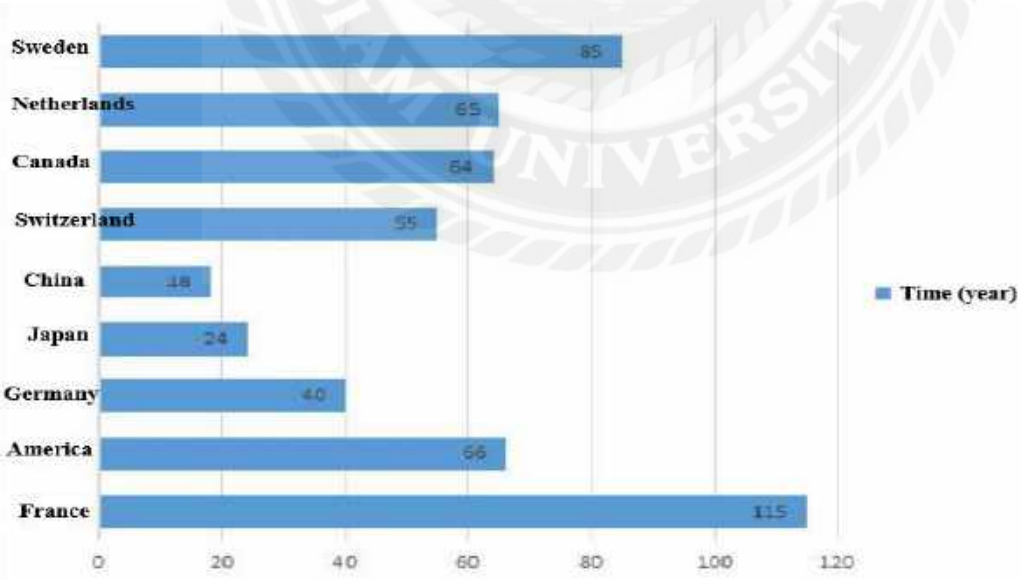

Figure 4-1 Aging process in different countries

Source: According to the data compiled by the National Bureau of Statistics of China.

The aging process in different countries from the perspective of population structure, China's aging development has been very fast in the past decade. According to China Statistical Yearbook 2016, we can find that the age structure of the Chinese population has changed significantly. The proportion of the elderly population and the proportion of children and children show opposite trends, and this trend also indicates that China's population aging situation is very serious. As of the end of 2015, by the end of 2015, China's population aged 65 years and over had increased from 100.55 million in 2005 to 143.86 million, accounting for 10.5% of the total population, which is higher than the aging standard issued by the United Nations (7%) 3.5 percentage points higher; on the other hand, the number of children between 0-14 has decreased from 26.012 million in 2005 to 22.715 million, and the proportion of the total population has also dropped from 20.3%. 16.5%, a decrease of nearly 4 percentage points, and a decrease of more than 6 percentage points compared with 2000. As shown in Table 4-1, according to the data calculation, we can clearly see that the decline rate of the juvenile population is higher than that of the elderly population. This shows that the number of elderly people in China will accelerate in the future, and the aging population will become more severe in the future. It can be seen from Figure 4-2 that in 2015 China's total dependency ratio was 37%, children's dependency ratio was 22.6%, and the elderly dependency ratio was 14.3%. During 2005-2015, China's elderly dependency ratio has been continuously increasing. Therefore, our country will implement a comprehensive two-child policy on January 1, 2016 to increase the number of children and children, control the increase in the proportion of the elderly population, and reduce the support burden of young people in the future, otherwise China's population growth rate may become negative number.

Table 4-1 2005-2015 China's population and proportion by age group

Years	Total population Unit (ten thousand people)	0-14 years old	Percentage of total population unit (%)	15-64 years old	Percentage of total population unit (%)	65 years and over	Percentage of total population unit (%)
2005	130756	26504	20.3	94197	72.0	10055	7.7
2006	131448	25961	19.8	95068	72.3	10419	7.9
2007	132129	25660	19.4	95833	72.5	10636	8.1
2008	132802	25166	19.0	96680	72.7	10956	8.3
2009	133450	24659	18.5	97484	73.0	11307	8.5
2010	134091	22259	16.6	99938	74.5	11894	8.9
2011	134735	22164	16.5	100283	74.4	12288	9.1
2012	135404	22287	16.5	100403	74.1	12714	9.4
2013	136072	22329	16.4	100582	73.9	13161	9.7

2014	136782	22558	16.5	100469	73.4	13755	10.1
2015	137462	22715	16.5	100361	73.0	14386	10.5

Source: China Statistical Yearbook 2016。

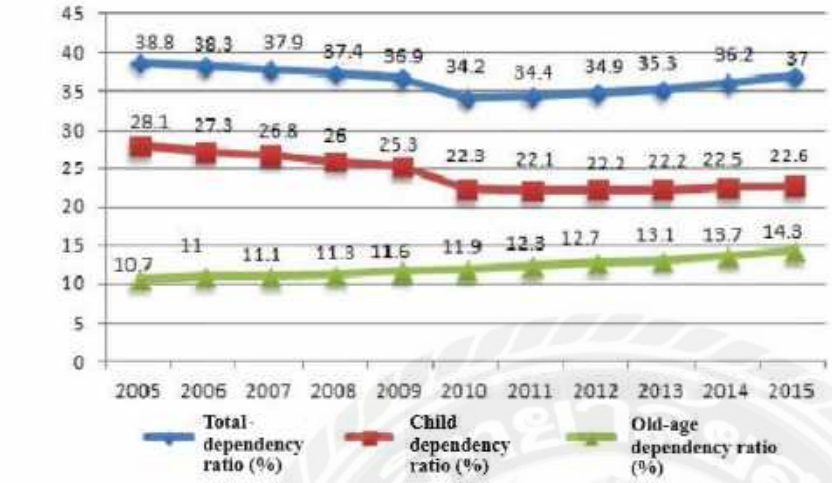

Figure 4-2 Chinese child dependency ratio and elderly dependency ratio (2005-2015)

Source: China Statistical Yearbook 2016。

Table 4-2 2006-2015 child dependency ratio and elderly dependency ratio

Dependency ratio / Time	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total dependency ratio	38.3	37.9	37.4	36.9	34.2	34.4	34.9	35.3	36.2	37.0
Child dependency ratio	27.3	26.8	26.0	25.3	22.3	22.1	22.2	22.2	22.5	22.6
Old-age dependency ratio	11.0	11.1	11.3	11.6	11.9	12.3	12.7	12.7	13.7	14.3

Source: China Statistical Yearbook 2016.

From the perspective of the entire population, China is not only the country with the largest elderly population, but also the country with the fastest growth rate. As shown in Figure 4-3 below, it is expected that by 2055 ,which is the middle of this century, China will have nearly

500 million people over the age of 60 .According to the survey, as of 2016 ,the total population of the United States was only 323.1 billion, which means that the number of elderly people in China will be greater than the total population of the United States in the next two or three decades.

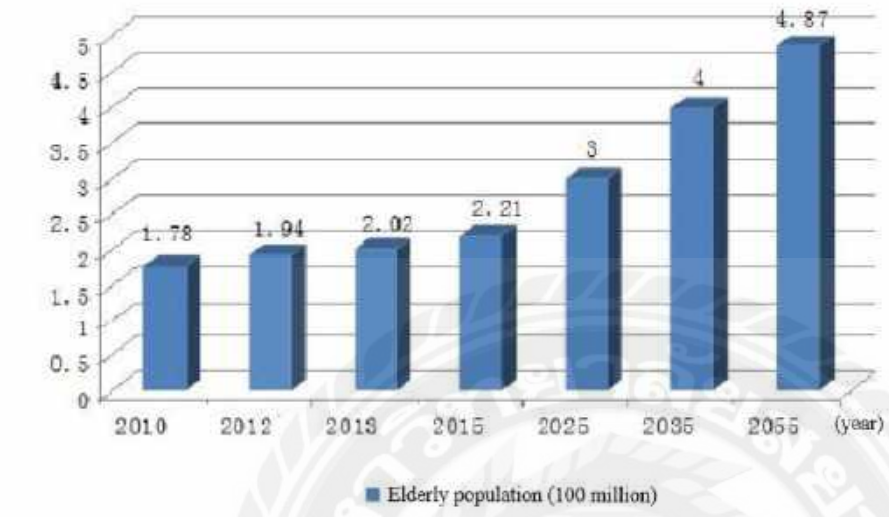

Figure 4-3 Growth of China's elderly population (60 years old and above)
Source: National Bureau of Statistics of China

From the perspective of China's provinces, at the end of 2015,13 of China's 31 provinces had an aging level (according to the 65 -year-old standard) that exceeded the national aging level (10.5%), mainly: Chongqing (13.3%), Liaoning(12.9%), Sichuan (12.9%), Shanghai(12.8%), Jiangsu(12.7%), Shandong(11.7%) , Zhejiang (11.3%), Anhui (11.2%), Hubei (11.2%), Hunan (11.2%), Jilin (10.9%), Heilongjiang (10.8%), Beijing (10.7%). From this we will find that these aging tend to occur in more developed cities along the coast.

4.1.2 Characteristics of China's population aging

Compared with other countries, China's aging characteristics are more unique. Because the population base is large, the growth rate of the elderly group is also large. China's urban-rural differentiation is relatively serious, and its economic foundation is weak. The above basic national conditions determine that China's aging must have its own characteristics, and the negative impact of aging may be more serious than other countries.

(1) The elderly group is large in scale and growing rapidly. According to current data, China is now not only the economy with the largest population in the world, but also the

economy with the largest number of elderly people. In 1953, China conducted the first national census. The results showed that the number of people aged 65 and over was 26.2 million. In 2000, China conducted the fifth national census, and the number of people aged 65 and over reached 88.21 million, and its proportion has reached the standard of the United Nations aging society. It has officially entered the aging society, only 47 years old the population has increased 2.36 times. By 2015, China's population aged 65 and over was 143.86 million. In just over a decade, the number of China's elderly population has increased by 1.6 times, and the proportion of the elderly population has rapidly increased from 7% in 2000 to At 10.5% in 2015, the total number of elderly people in China is more than the total population of most countries in the world. According to a survey, China's population aged 60 years and over reached 222 million in 2015, accounting for 16.15%. In 2016, the number of people aged 60 and over reached 229 million, and the elderly population over 65 It has exceeded 150 million, and the number of elderly people is still increasing. As shown in Figure 4-4, the United Nations predicts that China's population of 60 years and over may reach 248 million in 2020, and the proportion of the elderly is expected to reach 17.17%; the population of 60 years and over in 2025 is expected to be 3 Billion; the United Nations expects China's elderly population to increase to a maximum in 2040, and then the rate of aging will slow down, because China officially implemented the family planning policy in 1979 and has been fully implemented; and 2050 The population of people aged 60 years and over may exceed 500 million, and the aging situation is still quite serious.

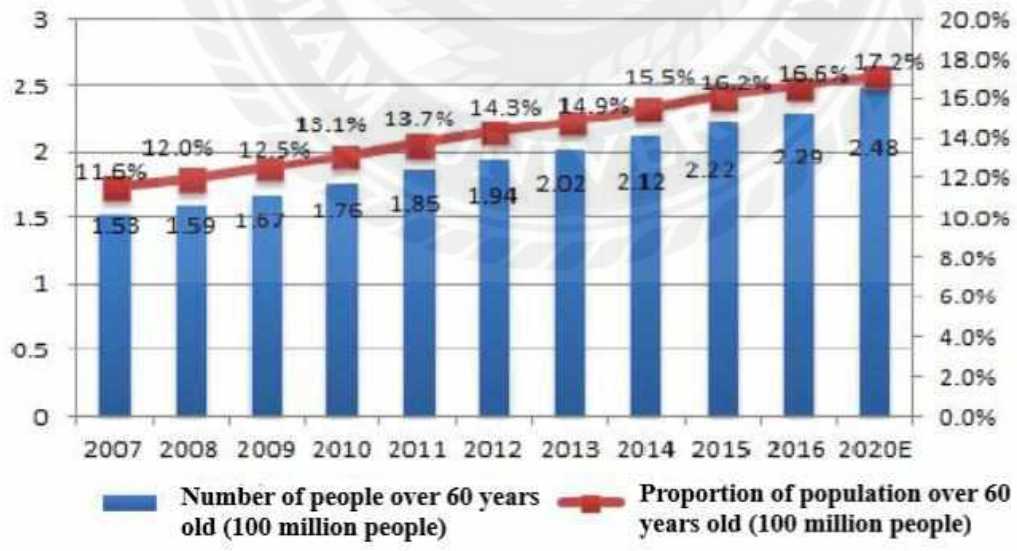

Figure 4-4 The number and proportion of China's population over 60 years old from 2010 to 2020

Source: China National Bureau of Statistics and United Nations Survey

The total population of China is currently about 1.425 billion. As of the end of 2016, the number of people aged 60 years and over in the country has exceeded 230 million, accounting for 16.7%. By 2055, which is the middle of this century, China is expected to have nearly 500 million people over 60 years old. It is very huge. According to the survey, as of 2016, the total population of the United States was only 323.1 billion, which means that the number of elderly people in China will exceed the total population of the United States in the next two to three decades.

China's aging population is not only large in size, but also growing rapidly. In 1953, China conducted the first national census until the fifth census in 2000, which was 47 years apart. In these 47 years, the population aged 65 and over increased 2.36 times, the average annual growth rate It is 2.6 percentage points. However, during the 47 years at that time, China's population growth rate was only 1.6%, which was one percentage point slower than the aging rate. The number of elderly people in the total population rose from 4.4% in 2000 to 7.0%, an increase of 2.6 percentage points. In the past ten years, the national population growth rate is about 1.1%, while China's aging population is still growing at a high rate of about 3.4%. China's population aging is more than twice the national population growth rate. This is a Very serious problem. The most important thing is that China's aging rate is not only faster than the national population growth rate, but also much higher than the average growth rate of the world's aging population. From the perspective of the growth rate of the aging population, according to the predictions of the United Nations and various authoritative agencies, the average annual growth rate of the world's aging population is expected to be about 2.5% in the 30 years from 1990 to 2020. The average annual growth rate is about 3.3%, so the growth rate is significantly higher than the average annual growth rate of the world's aging population. From the perspective of the number and proportion of the aging population, China's aging accounted for 6.1% of the total population in 1995. By 2020, the aging level is expected to be 11.5%, an increase of more than 5 percentage points; meanwhile, the world's aging level 1995 It reached 6.6% by the year, and it is expected that the world's aging level will be 9.3% in 2020, an increase of about 2.7 percentage points. Therefore, in terms of the proportion of the aging population, China is also much higher than the world aging level. Statistics show that the number of elderly people in China is expected to reach 167 million in 2020, and the number of elderly people in the world at this time is expected to be about 698 million, so the number of elderly people in our country alone accounts for about One-quarter share, in other words, one in four senior citizens in the world will be Chinese in the next few years. as shown in Figure 4-5 below.

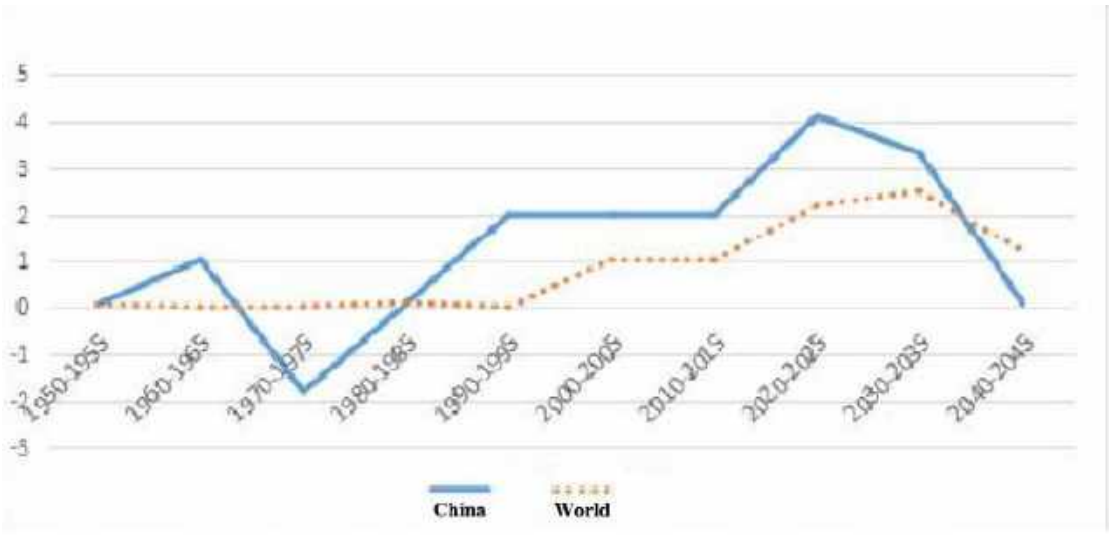

Figure 4-5 The average annual increase rate of the elderly in China and the world
Source: China National Bureau of Statistics and United Nations Survey

(2) showing "old before getting rich" feature, limiting economic development. In general, developed Western countries will only enter an aging society after they have a relatively strong economic foundation. Its performance is: to go into after aging and economic modernization modernize the economy synchronous or population aging. Cases such as 1930, the British at the time entered the aging society, per capita GDP 22429 dollar;1940 American when entered the aging society, per capita gross domestic product has been up to the 8832 dollars. According to an aging society standard, China in 2000 formally entered the year, but in 2002years time, China's per capita GDP just only 980 US dollars. Thus, it can be seen, and compared to western developed countries still exist huge big gap. Because these developed strong economic base, good living conditions of the population, per capita GDP higher in the step after the aging society, the state can establish the appropriate sound social security system, pension system, etc. To provide more for the elderly population Guarantee, and take precautionary measures in advance for the future uncertainty crisis. In contrast, China has a relatively weak economic foundation and a low standard of living. Under China's economic conditions, there is not enough strength to afford a relatively complete old-age security system. If a crisis occurs, due to economic constraints, the crisis may not be able to be resolved and responded well. So, in this case, the degree of population aging to deepen China brought about by negative harm is greater than the other aging countries in the world. Faced with such great pressure, China should take active actions to take measures to deal with the aging crisis.

(3) Unbalanced regional development of population aging. Because the implementation of the family planning policy is specifically implemented by the Chinese regional government, the leading organs and leaders are different, and the specific implementation situation is also

different, and the different levels of economic development in different regions of China have led to the development of an aging population in China. Difference.

Judging from the regional distribution, the eastern and central regions have a relatively deep aging degree due to economic and demographic factors, while the western region has a relatively low aging degree. For example, in 13 provinces (Chongqing (13.3%), Liaoning (12.9%), Sichuan (12.9%), Shanghai (12.8%), Jiangsu (12.7%), Shandong (11.7%) that exceed the national level of aging , Zhejiang (11.3%), Anhui (11.2%), Hubei (11.2%), Hunan (11.2%), Jilin (10.9%), Heilongjiang (10.8%), Beijing (10.7%) Most of them are in eastern and central provinces and cities. Because of the difference in the level of economic development in China, the degree of aging in China has gradually decreased from east to west. For example, Shanghai officially entered an aging society in 1979, and in 2012 the Ningxia Hui Autonomous Region had just entered the aging stage. The gap between the two in entering the aging population was 33 years. Now, from the data of China's statistical yearbook, it is concluded that so far, Tibet (the proportion of people aged 65 and over is 5.7%) has not yet entered an aging society. Of course, the difference in the time to aging is just one aspect of the many differences in different regions, and there are many other differences that also show the difference in the degree of aging caused by different regions, such as the scale of aging. As shown in Table 4-3 below, as of the end of 2015, the province with the highest proportion of people aged 65 and over in the total population of the region was Chongqing with 13.3%, and the lowest with Tibet 5.7%, with a difference of 7.6 percentage points. In terms of the number of elderly people in each province, the gap is even more obvious.

Table 4-3 Age composition of China's provinces and cities in 2015

Region	Population (person)	Aged 0-14	Aged 15-64	Aged 65 and Over
National Total	21312241	3521811	15559965	2230465
Beijing	33577	3399	26600	35775
Tianjin	23937	2425	19047	24641
Hebei	1155542	21065	82732	117567
Shanxi	56949	8570	43146	52324
Inner Mongolia	39022	5100	30193	37288
Liaoning	68085	7222	52104	87595
Jilin	42851	5135	33039	46769
Heilongjiang	59270	6267	46579	64239
Shanghai	37395	3493	29108	47936
Jiangsu	1238192	16789	91315	157135
Zhejiang	85977	11103	65188	96855
Anhui	95584	16986	67908	106895
Fujian	59622	10476	43776	53694
Jiangxi	71055	15254	49362	64388
Shandong	1530763	25033	1101954	178471
Henan	1476154	30979	1020949	145415
Hubei	90927	13802	66910	102146
Hunan	1056139	19444	74316	118534
Guangdong	1681666	26934	1288354	123964
Guangxi	74709	16902	50512	72940
Hainan	14159	2805	10158	11954
Chongqing	46856	7310	33318	62282
Sichuan	1277289	20283	90918	165273
Guizhou	55017	12346	37455	52149
Yunnan	73861	14119	53532	62088
Tibet	50634	1193	35812	2890
Shaanxi	58934	8868	43966	60994
Gansu	40486	6922	29772	37912
Qinghai	91611	1838	66728	6502
Ningxia	10382	2086	75315	7643
Xinjiang	36763	8021	26120	26207

Source: China Statistical Yearbook 2016

(4) The declining birthrate is more prominent, and the maintenance burden is increasing. Since the introduction of family planning in the 1970s in China, the family size has decreased in recent decades, the birth rate of babies has fallen rapidly, and there are very few children in

each family. Most of the current "post-80s" and "post-90s" are the only child. Therefore, China is facing a huge problem today. In the process of aging and accelerating deepening, while the number of elderly groups continues to increase, the number of young children continues to decrease, and the working-age population is seriously insufficient. Therefore, the problem caused by the deepening of China's aging is not only "not rich", but also accompanied by a "minority" problem, which leads to a very heavy burden of supporting the younger generation of children now and in the future.

4.1.3 Forecast of the trend of China's population aging

The aging of the population has become an irreversible major challenge facing all countries in the world today, and should arouse great attention from all walks of life at home and abroad. As China's population aging has its own unique characteristics, such as the rapid growth of the population base of the elderly population, the uneven development of the aging region, and the "less wealthy and fewer children", etc. After the above theoretical analysis, we understand that China's population aging the harm is greater than other countries, and it will inevitably limit the future development of China's economy, but what will happen in the future? No one knows very well, so be prepared for it, or you will be caught off guard and unable to start when you really face a crisis in the future. Therefore, it is necessary for us to make a prediction about the aging of the Chinese population. According to the predictions of the works of many well-known scholars at home and abroad, combined with the current basic national conditions of China, this paper makes the following simple prediction and summary:

(1) Large population and rapid growth. Since the 1990s to the present, China's aging process has accelerated. In 1990, the population aged 65 and over was 62.99 million, and by 2000 it had increased to 88.11 million. The proportion of aging also increased by 1.39 percentage points in just 10 years. By 2015, China's population aged 65 and over was 143.86 million, exceeding the total population of most countries. The proportion of the population over 65 years of age has risen rapidly from 7% in 2000 to 10.5% in 2015. In 2016, China's elderly population over 65 years of age had exceeded 150 million. As of 2017, the number of elderly people in China has been rising, the number of elderly people has reached 158.31 million people, and the proportion of the population aged 65 and above has accounted for 11.4%, which is higher than the aging population standard issued by the United Nations (7%) It is 4.4% higher. At present, China has become the country with the largest total number of elderly people in the world. According to a survey, the number of people aged 65 and over in China has been continuously increasing in the past decade. In 2008, the year-on-year growth rate was 3.0%, while the year-on-year growth rate in 2017 has soared to 5.5%. According to this trend It is predicted that by 2025, China's elderly population (60 years old and above) is expected to reach 300 million, and the aging level is expected to be 17. 20%. China may therefore enter the ranks

of super-aged countries; around 2033, the number of elderly groups It will reach 400 million. Since China implemented the family planning policy in 1979 and it has been strictly implemented, the United Nations expects the growth rate of the elderly population in China to reach its maximum in 2040, and the proportion of the population aged 65 and above will increase to more than 20%, and then the rate of aging There will be a slowdown; and around 2050, the population of people aged 60 and above may exceed 500 million, accounting for one third of China's total population. After that, the aging process may slow down, but the aging population will maintain for a long time. Above a high level. This high level of aging may continue in the 21st century. For example, as shown in Figure 4-6 below:

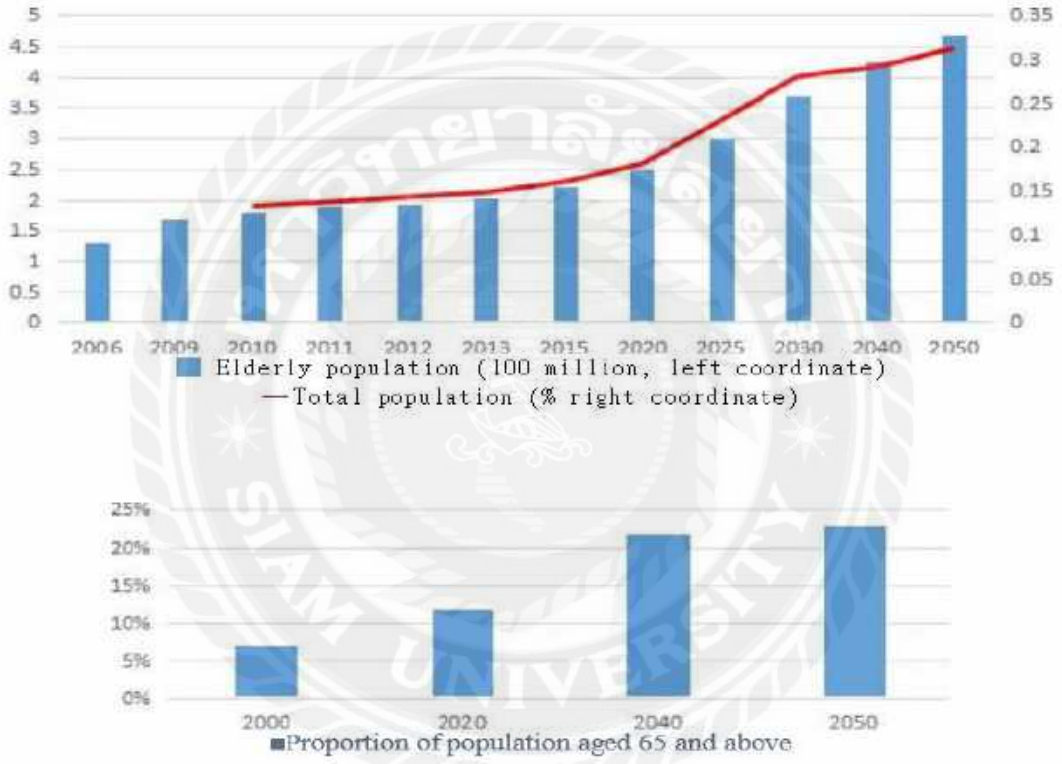

Figure 4-6 China's aging population and future forecast changes

(2) The special period of China's population aging. According to the research results, China has entered an overlapping period of growth in the total population, working-age population and the elderly population. "Three-line overlapping growth": China's total population continues to grow and is expected to reach about 1.6 billion by 2050; China is expected to The number of working-age population will continue to increase to 2020, up to about 9.41 million, but the percentage of working-age population will increase to 2010, accounting for about 67%, that is to say from 2010 to 2020 The period with the lightest maintenance burden is also the best period for China's economic development, because the proportion of the working-age population will begin to decline after 2020, and then the factors that hinder economic

development will begin to appear. And now it is 2018, and there are less than two years left until 2020, which means that factors that are not conducive to China's economic development are starting to appear immediately. Today, the aging process has not slowed down at all, but the number of working-age population has begun to decrease. From 2015 to 2050, during these decades, China's population will continue to age, the number and size of the elderly population will continue to increase, and the growth rate of the elderly population will always be much higher than other countries. In the next 20 to 30 years, China will enter a period of rapid aging, and the elderly population will gradually increase; the proportion of the elderly population will rise to about 33% in the middle of this century in the future, and will maintain such a high level for a long time.

(3) The trend of aging is becoming more and more significant. In demography, the elderly population is subdivided in several stages: the younger age population is 60-69 years old; the middle-aged elderly population is 70-79 years old, and those over 80 years old are called the elderly population. In the case where the original medical level was relatively settled, under the background of poor living conditions, people's lifespan is relatively short, and it is considered to be a long life to live to sixty or seventy. Now it is normal for the elderly to live to 70 Not surprisingly. It is also more and more common for elderly people over 80 years old. In 2000, the elderly population in China reached 110,000. It is currently expected that China's elderly population will reach 30.67 million in 2020. It can be found that after only 20 years of economic development, the aging of the population has reached an unprecedented commanding height. The increase in the elderly population is directly a straight line soaring at an alarming rate. Authoritative institutions predict that the total number of elderly people in China in the middle of the 21st century will account for one-third of China's total population, while the elderly population over 80 will account for about 40% of the total. This data is very terrible, which means that China's severe aging problem and the aging problem are emerging at the same time, which will bring great harm to economic development. The most important thing is that among the elderly population, the prevalence rate of the elderly due to physical problems is very high. It is now estimated that the disability rate of the elderly is close to 50%, so it is very important for this part of the elderly to support the problem, whether it is economic or living All must be taken care of.

(4) "Two mountains": population aging and total population. As we all know, one of the basic national conditions in China at this stage is that China has the largest population. At the same time, China has also become the economy with the largest number of elderly people in the world, and the growth rate of the elderly population is one of the fastest countries compared to other countries, and it is now the elderly population in the world (60 years old and above) The only country with more than 200 million yuan. As of the end of 2017, the total number of elderly people in China exceeded 230 million. In 2016, China fully opened up the two-child

policy, so according to the current population policy and population base forecast, the total population of China will not decrease significantly by 2050, but at the same time, the number of elderly groups continues to increase relentlessly. The aging situation is getting more and more serious. In summary, China is faced with the double oppression of two mountains with a rapid increase in aging and a large population. According to calculations by relevant authorities, China's population aged 60 and over exceeded 222 million in 2015, accounting for 16.15% of the total population. The elderly population in 2017(People aged 60 and over) exceeded 230 million, accounting for 16.7% of the total population. It is estimated that by 2020, the elderly population will reach 248 million, and the aging level will reach 17.17%. As of the end of 2015, China's total population the dependency ratio reached 37%, the child dependency ratio reached 22.6%, and the elderly dependency ratio reached 14.3%. In the 11 years from 2005 to 2015, the number of Chinese children and children continued to decrease, and the number of elderly populations continued to increase. According to the prediction of the National Aging Office, China's elderly dependency ratio will reach 27.9% by 2050, and the maintenance burden of the working-age population will increase by as much as three times. In 2013, China's working-age population began to experience negative growth, which means that the working-age population's maintenance burden has increased substantially. China had a large population base, and it was very difficult for the economy to develop to the point where it could feed more than one billion people. The growth rate of the working-age population is decreasing and the elderly population is increasing. This has greatly increased the burden of economic development. And with the deepening of aging, it will increasingly hinder economic development, because the elderly face more problems and difficulties, because the elderly does not work because of retirement, their income is low, or even no, they cannot contribute to economic development. In addition, the disability rate of the elderly among the elderly is very high, and the probability of getting sick is also higher. Therefore, in addition to economic needs, some people need to be taken care of.

In recent years, there are many important issues in China that have aroused great concern from the society. The issue of population aging is one of the high-profile concerns. China's aging population is becoming more and more serious and has affected China. Various aspects of social and economic development, and this article mainly studies the impact of China's aging population on residents' consumption through simple empirical studies.

4.2 Overview of Chinese residents' consumption

At present, with the rapid economic development, the living standards of Chinese residents are constantly improving, and the consumption level of residents is also gradually increasing. However, judging from the current overall development of the Chinese economy, it is mainly driven by the import, export and investment to achieve rapid economic development. The

consumption as one of the three driving forces, the contribution rate has been low, so the lack of domestic demand in China, the future will hinder the healthy development of the economy. In order to promote the transformation of China's economic structure, it is necessary to fully understand China's domestic facts, so as to take more targeted measures to stimulate domestic demand and boost consumption growth of the entire national economy.

4.2.1 Current status of Chinese residents' consumption

In recent decades, China's GDP total increasing income levels also will be increasing, so on this basis, consumer spending will have support. However, the level of a country's economic development can be expressed through the resident consumption rate. If the resident consumption rate of a country has been very low, it will not only directly affect the improvement of the entire country's consumption level, but also have an impact on the resident consumption structure. Influences. Thus, you can find that Chinese consumption rate is low and many of the good development counterproductive.

The following uses specific data to explain the specific situation of current Chinese consumption. The following table 4-4, Chinese GDP has maintained a relatively high level is increasing year by year, as of 2015, GDP from 2001 in 110863.1 billion to 2015 in 685505.800 million-yuan, GNP from 2001 year 109276. billion to the 2015 -year 682635. 1 billion. 2016 GDP nominal increase of 6.7% (after deducting price index grew 2.0 percent after), real GDP growth of 4.7%. Observation table 4-5, the last decade, although the total amount of consumer spending has been increasing, from 2001-year 50884.88 growth billion yuan in the 2015 year 265411. 63 billion, but in addition to household consumption rate in recent years, outside slightly increased, the overall situation, the proportion of total consumption expenditure of residents occupy the total national expenditure on the decline, from 2001 year 45.74% down to 2015 years of 38.10%.

Table 4-4 China's GDP and growth rate from 2001 to 2005

Time	GNP (100 million yuan)	GDP (100 million yuan)	Annual GDP growth rate (%)	GPI annual inflation growth rate (%)	Real GDP growth (%)
2001	109276.2	110863.1	8.3	0.72	7.58
2002	120480.4	121717.4	9.1	-0.77	9.87
2003	136576.3	137422.0	10.0	1.16	8.84
2004	161415.4	161840.2	10.1	3.88	6.22
2005	185998.9	187318.9	11.3	1.82	9.48
2006	219028.5	219438.5	12.7	1.46	11.24
2007	270844.0	207232.3	14.2	4.75	9.45
2008	321500.5	319515.5	9.65	5.9	3.75
2009	348498.5	349081.4	9.25	-0.7	9.95
2010	411265.2	413030.3	10.45	3.34	7.11
2011	484753.2	489300.6	9.35	5.9	3.45
2012	539116.5	540367.4	7.82	2.81	5.01
2013	590422.4	595244.4	7.68	2.62	7.66
2014	644791.1	643974.0	7.29	1.83	4.06
2015	682635.1	685505.8	6.9	1.44	5.46
2016	741140.4	744127.2	6.7	2	4.7

Source: China Statistical Yearbook 2016。

Table 4-5 Total Resident Consumption and Resident Consumption Rate from 2001 to 2015

Time	Total consumer expenditure (100 million yuan)	Resident consumption rate (%)	Time	Total consumer expenditure (100 million yuan)	Resident consumption rate (%)
2001	50884.88	45.74	2009	126964.7	36.29
2002	55247.64	45.18	2010	146413.96	35.65
2003	59521.96	43.03	2011	176960.95	36.41
2004	66787.83	41.04	2012	19030.34	36.79
2005	75459.29	39.89	2013	220300.57	36.9
2006	84337.04	38.13	2014	243171.04	37.57
2007	100048.08	36.82	2015	265411.63	38.1
2008	115630.7	36.14			

Source: China Statistical Yearbook 2016。

Table 4-4 and Table 4-5 only show the changes in the level of consumption expenditure and the consumption rate of residents in a country in China. This allows us to see that the consumption rate of residents in China is indeed steadily decreasing. Or a world-wide comparison, so we do not know exactly how low China's resident consumption rate is. Therefore, in order to better study consumption, this article conducted a simple survey and analysis of other countries in the world to compare with China makes a simple comparison.

As of 2016 ,the final consumption rate of Chinese residents was 53.6 % .Accordin g to research, as early as 2013,the final consumption rate of the United States has re ached 69.2% ,Japan has reached 61.6% , and even India, which has a similar situation with China, has reached 61.8% In Southeast Asia, Thailand also reached 53.7% in 201 3 ,and even the final consumption rate in South Africa is 61.2% .China's current final consumption rate in 2016 is actually not as good as those of three years ago. The an alysis of these data shows that this unfavorable situation will restrict the development of the national economy in the future.

4.2.2 Chinese residents' consumption structure

The consumption structure is influenced by many factors, among which there are three main ones: economy, society and population. The resident consumption structure specifically refers to the proportional relationship occupied by various consumer goods in the consumption process under certain social conditions, which can show the content and quality of social consumption. According to the National Bureau of Statistics standards, this article divides various consumer products into 8 categories: "food expenditure, clothing expenditure, housing expenditure, household equipment and supplies expenditure, transportation and communication expenditure, cultural education and entertainment services expenditure, medical care expenditure and other expenditures." The above eight major consumer expenditures together constitute the resident consumption structure to be studied.

According to statistics, at present, the characteristics of Chinese residents' consumption structure are: the proportion of residents' consumption of living materials gradually decreases, and the proportion of development materials increases year by year. Because in the past when the economic conditions were not good, the clothing and clothing of the residents could not be solved, and there were no idle funds to meet other needs. With the economic development and social progress, China has entered a comprehensive well-off society and the residents live Conditions have been improved, and food and clothing have long been resolved, so I have idle funds to meet travel, entertainment and other enjoyable materials.

(1) The share of expenditure on food in total consumption has declined. When economic productivity is relatively backward, people can only solve the problem of food and clothing, and then consider other factors. Therefore, more than ten years ago, China was lagging in productivity, the economy was underdeveloped, and people's living standards were relatively low. Therefore, food consumption was given priority, so food expenditure accounted for the highest proportion. According to Engel's theory, when economic conditions improve and income increases, the proportion of residents' food expenditure will continue to decline. In recent years, the consumption structure of Chinese residents has improved, and food expenditures have continued to decline. In 2016, the per capita food expenditure of Chinese residents accounted for 30.1% of consumption expenditure, while in 2017, the per capita food expenditure of Chinese residents fell to 29.3%, a decrease of 0.8 percentage points in just one year.

(2) The share of housing expenditure in China's total consumption expenditure has gradually increased. With the improvement of living conditions, residents pay more and more attention to the quality of living, coupled with the continuous rise in housing prices, resulting in higher and higher expenditures on housing.

(3) The proportion of transportation and communication has increased. With the continuous advancement of economic technology, the contact between residents has become more convenient due to the emergence of mobile communication devices, and electronic products have gradually increased. Update iterations have accelerated, and residents' consumption in this area will also increase. With the popularization of transportation, cars, fuel, etc. will also increase residents' consumption.

(4) The proportion of clothing expenditure has a slight downward trend, and the proportion of household equipment and supplies in consumption has remained relatively stable. From 2005 to 2012, the per capita clothing expenditure of Chinese residents fluctuated around 8.62%. In 2016, the proportion of per capita clothing expenditure of Chinese residents decreased to 7.0%. In 2017, the proportion of per capita clothing expenditure fell to only one year 6. 8% .Although the proportion of clothing has declined, the total consumption of clothing has been increasing, because with the improvement of living conditions, residents are paying more and more attention to the quality, style and grade of clothing, but only because people's income level is higher than clothing expenditure, so The proportion of clothing expenditures has declined relatively. In terms of household equipment and supplies, it has maintained a relatively stable state for many years.

(5) The proportion of culture, education and entertainment first rises and then declines, but the decline is small, and the overall level shows an upward trend. In 1980, the proportion of

Chinese residents' per capita expenditure on culture, education and entertainment was about 6.85%. In 2012, per capita expenditure on culture, education and entertainment rose to 10.37%, an increase of 3 percentage points. In 2016, the proportion of per capita expenditure on culture, education and entertainment rose to 11.2%, and in 2017 it rose again to 11.4%.

(6) The health care situation is similar to the proportion of education and entertainment; all is to improve the overall level. Among them, the increase in the proportion of rural health care is the most obvious. In 1995, rural health care accounted for 3.14%, while in 2012 it increased to 9.70%. In 2016, China's per capita healthcare accounted for 7.6%, followed by China's per capita healthcare accounted for 7.9% in 2017.

(7) Other expenditures account for a relatively small proportion of consumer expenditures and have remained relatively stable. For example, in 2016 and 2017, other expenditures accounted for 2.4% of consumer expenditures.

4.2.3 Improve consumer status

Since the world financial crisis in 2008, the global economic growth rate has been forced to decline. In the current era of open economy, the occurrence of the financial crisis is bound to affect every country, and China is no exception. In order to restore the economic growth rate to its original level, China has taken many measures, such as increasing investment to promote economic development, enabling it to maintain a high growth rate. Therefore, at this stage, China's fixed asset investment contributes as much as 30% to 40% of the economy. Compared with about 20% of Western developed countries, China's investment is a bit abnormal, so it will inevitably limit the Chinese economy. Healthy and sustainable development. On the other hand, the consumption level of Chinese residents has only reached more than 50% so far, and many countries like the above mentioned have reached more than 60% level as early as three or four years ago. Therefore, China's economic development is in urgent need of transformation to bring economic development on track.

Economic development is staged. This stage of development mainly relies on investment and exports, and has reached a bottleneck period. Therefore, it is inevitable to increase domestic demand in the future to boost China's economic development. In addition, with the recent decline in foreign demand, the urgency to shift to domestic demand has increased, and the important role of domestic consumption in economic growth has been exceptionally prominent.

4.3 The effect of population aging on residents' consumption

Based on the above analysis, this section specifically studies the impact of the elderly population on residents' consumption. For this reason, this section mainly analyzes the specific impact mechanism between the two.

4.3.1 The direct impact of population aging on residents' consumption

As we all know, the elderly group has its own unique consumption habits, and its own consumption ability is also different from people of other ages. This includes total consumption, consumption structure, etc. The direct impact is as follows:

(1) Aging will affect the total consumption of residents. After the elderly generally retire, there is no source of wages, so consumer spending will be restricted. At this time, the main financial support is the savings accumulated by the elderly when they are young and the pension after retirement. In China, as of now, the urban-rural differentiation is still relatively obvious, so the impact of aging on urban and rural areas is also different. In cities and towns, employees of some administrative institutions have pensions, so after retirement, there is still a source of funds, and consumption is OK. However, there are still many retired employees from non-institutional units. After retirement, the pension is very small, and some elderly people do not have pension insurance and medical protection, so it is far from enough to support their consumption, so it will lead to reduced consumption. In rural areas, most elderly people do not have endowment insurance or pensions. After retirement, they do not have any income. The consumption expenditure mainly depends on the savings when they are young. Therefore, the consumption of elderly people in rural areas will be greatly reduced, reflecting the rural residents' consumption. The impact of population increase may be more severe.

(2) The deepening of the aging population will change the consumption structure of residents. The elderly group has its own unique consumption habits and hobbies, so when the proportion of the elderly population continues to increase, it will inevitably affect the entire residents' consumption structure. After a person reaches old age, due to changes in various aspects of his physical functions, his diet will change a lot, the food intake will become smaller, but the nutrition will be sufficient, so there will be a corresponding demand for food, which will affect food expenditure; The elderly group needs to pay more attention to health and health care due to their age and changes in their health, and pay special attention to their physical health. As a result, consumer spending on health care will increase. After retirement, the elderly group has greatly increased their leisure time because of no work restrictions. In turn, many elderly people will choose to travel, participate in cultural activities, etc. to evacuate the body and mind and enrich their lives. Therefore, consumption in culture, education, entertainment

and tourism will increase. Demand for clothing, transportation and communications has decreased.

(3) The consumption of the elderly group is inertial and altruistic. When a person reaches a certain age, because of past experience, he will have a higher rationality and self-control ability. Due to age and experience, the elderly group will be very cautious in shopping. They will not buy things that they don't need. They will only make practical purchases. They are no longer as impulsive as they were when they were young, and they have a lot of leisure time. Time is available for me to choose carefully, so the consumption inertia is very strong and rational; the elderly group usually cares for the backup of their children and considers their children's feelings very much, so they will consider whether their consumption is beneficial to other family members when shopping, so Consumption is relatively altruistic.

(4) The impact of increased life expectancy now. With economic development, social progress, and improved living conditions, medical and health conditions have also improved, so people's life expectancy is getting longer and longer at this stage. The consequence of this change is that young people feel more years after retirement. In order not to affect their ability to consume when they are old, they have to work harder to earn money and save money when they are young. This is especially true for the elderly group, because life expectancy is prolonged, so it is necessary to consume more carefully to cope with more uncertainties in the future.

4.3.2 Indirect impact of population aging on consumption structure

In addition to the direct impact of population aging on the consumption structure in the previous section, at a macro level, population aging will also indirectly affect consumption by affecting income distribution, total social output, labor productivity, transfer payments and industrial structure.

(1)Population aging affects consumption by affecting income distribution. The consequence of the increasing ageing of the population is that more and more elderly people have withdrawn from production and become a pure consumer, without wage income, and their income level has declined. There is a large income gap between the elderly population and the working population, especially in areas where the economy is underdeveloped or the social security system is incomplete, and the labor force can only receive a small pension after exiting the production field; or some manual labor It is difficult for people to continue to do the work they depend on for their livelihood after they grow older, but they lack other means of earning a living, and their incomes suddenly drop after retirement. This aspect lowers the income level of the entire society, and widens the income gap between different age levels. Whether the

income level falls or the income gap widens, it is not conducive to the development of consumption. Consumption, as the first troika to drive economic development, the impact of consumption levels means that sustained economic growth is difficult to maintain, and the upgrading and transformation of the consumption structure is greatly restricted.

(2)Population aging affects consumption by affecting total social output. In the long run, the aging population of a country or region is increasing, which means that its elderly population is growing faster than the working population. Since the elderly are pure consumers who have withdrawn from the production field, their contribution to economic growth is limited. The status of non-producers makes the elderly consumers lose their income or reduce their income. They have to use the savings of youth and middle age to make the society the total savings fell. According to the life cycle theory of savings, a rational consumer can “rely on his own” for himself, that is, he can afford his living expenses when his old age income drops to a minimum, and his income will peak in his middle age, that is, his income. During the period of old age, they increased their savings. In old age, they not only did not save but also continued to consume savings in the middle age. According to the equilibrium theory of macroeconomics, saving is equal to investment. A reduction in saving means that investment will be reduced, affecting the formation and accumulation of social capital, thereby reducing the total output of society, hindering economic growth, affecting the rise of national income, and thus affecting Resident consumption and consumption structure.

(3)Population aging affects consumption by affecting labor productivity. The most intuitive problem brought about by the aging of the population is the reduction of labor force. The sufficient labor force is the prerequisite and guarantee for sustained economic development. As more and more labor force with draws from the production field, the economic achievements in the first three decades of China's reform and opening up are difficult to achieve. Copy, if the aging further intensifies, China will even have economic stagnation due to labor shortage. In addition to the problem of labor shortage, some easily overlooked problems are gradually exposed: China’s population base is huge, and the size of the labor population is relatively large in absolute terms. However, as the population ageing intensifies, the labor population the internal age structure is also constantly changing. Among them, the young labor force is gradually decreasing, while the proportion of the middle-aged labor force is increasing, and even a large part of the labor force is about to retire. This aspect is due to the continuous decline in fertility rate. There is no "fresh blood" to supplement the labor force population. On the other hand, with the improvement of the average number of years of education and the difficulty of acquiring knowledge, the age of the labor force for the first time to work has been continuously delayed. This change in the age structure of the labor force will greatly affect labor productivity. Therefore, even today when the labor force seems to be abundant, the

overall labor productivity of society has been constantly changing with the aging of the labor force's age structure: on the one hand, the labor productivity in the production field dominated by manual labor has declined; the other On the other hand, with the improvement of the quality of labor and the proficiency of labor, the labor productivity in the production field dominated by mental labor has increased. Affected by labor productivity, China's product market has undergone tremendous changes, and changes in its output structure will also greatly affect China's consumption structure.

(4)The aging population affects consumption by affecting transfer payments. There is also a serious burden of old-age burden brought about by the aging of the population. The elderly withdrew from the production field and no longer created wealth for society. Instead, they began to receive pensions and pensions. As the proportion of the elderly population continues to increase, the proportion of the labor force population gradually decreases, and the economic growth rate continues to slow down. As new labors continue to retire and receive pensions, the demand for various old-age benefits continues to increase. The government needs to transfer more transfer payments to the fields of health care, old-age welfare and old-age infrastructure. The investment in other areas of social economy is relatively reduced. Too. At the same time, China’s pension fund raising and investment system is not yet perfect. In order to fill the growing pension gap, the government has to increase the taxation of the labor force. This undoubtedly increases the burden on the labor force, which is not conducive to the long-term. As the economy develops, the level of the entire economy continues to decrease, which naturally is not conducive to the optimization and upgrading of the entire social consumption structure.

(5)Population aging affects consumption by affecting industrial structure. On the one hand, population aging reduces the number of labors, and industries that are more sensitive to labor resources will be greatly affected by population aging. Especially the primary industry represented by agriculture and the secondary industry represented by manufacturing. China is a large agricultural country, but it is relatively backward in agricultural technology, and is affected by China's special geographical environment and economic environment. With traditional manual labor farming, as China's population ageing intensifies and economic development is unbalanced, it is difficult for the elderly to bear heavy field labor, and young people migrate to cities to find better job opportunities. China's agricultural development is facing A daunting challenge; and the secondary industry dominated by the manufacturing industry is extremely flexible to labor resources. Today, as the problem of aging becomes more and more prominent, China’s cheap labor is exhausted. The former “world factory” lost labor due to the loss of labor. Resource comparative advantage. Various low-end manufacturing industries have shifted to Southeast Asia, where labor prices are lower, thus changing the

industrial structure of the entire country. On the other hand, the reduction in labor force has forced China's industries to shift to high-tech industries. Due to labor shortage, according to the balance of supply and demand, the supply of labor is reduced, its demand is increased, and the price of labor is increased. In order to save production costs, various industries are "forced" to invest in research and development of automated production technologies that can replace high-priced labor. The aging population "forces" production technology upgrades, thereby increasing productivity levels, promoting industrial structure upgrades and economic progress, which is beneficial to Transformation and upgrading of consumption structure.

In summary, the increasing proportion of the elderly population not only affects personal consumption decisions directly from the changes of personal income and consumption demand at the micro level, but also affects income distribution, total social output, labor productivity, and government transfer from the macro level. Payment and industrial structure indirectly affect the consumption structure of the entire society, and its impact will increase as the population ageing continues to intensify.

4.4 Empirical Test of the Impact of Population Aging on Residents' Consumption

Related to the aging population and the study of the relationship between the consumer, there is a lot of empirical model. For example: consumption function model and parsimony model. Among them, the simplified model has many advantages and conveniences in empirical research. It can be controlled without setting a specific function in advance, as long as it is supported by relevant consumption theory. In this way, the differences in the models caused by the different consumption functions are solved, and the restricted model has no such restrictions, and it is more flexible and freer. First of all, this paper is the use of a simple model for their empirical analysis, using the 2006-2015 Decade of time-series data, the number of aging population index used is 65 years old and 65 over the age of the number of standard populations. The selected variables are as follows: resident consumption rate (CS), logarithm of GDP per capita (LNGDP), real interest rate (R), elderly dependency ratio (ODR) and juvenile dependency ratio (CDN). Among them, the household consumption rate (CS) is the dependent variable, and the others are independent variables. Secondly, this paper and the consumption structure of resident's gray correlation analysis model by using the 2006-2015-year-old age dependency ratio data and China eight consumer spending data for simple computing correlation coefficient between the two, to analyze population aging of the population of different consumer support specific impact out.

4.4.1 Model setting

(1) Consumer behavior assumptions

To build a consumption function model, the first is to determine the assumptions. Consumer behavior needs to be presumed in advance so that a definite result can be obtained. This thesis now draws on the experience of previous scholars and analyzes China's contemporary realities, and now makes the following assumptions: First, China is in the early stages of socialism, the economic foundation is still relatively weak, and productivity development is relatively backward, so consumer behavior conservative cautious ; secondly, by the Chinese traditional culture tend to be more frugal; then, in the case of other conditions remain unchanged, the individual income residents and residents of the consumption is proportional ; and finally, due to the age and spending habits of different age the structure also will have some impact on the consumer.

(2) Model building

In 1953, the famous economist Modigliani first proposed the relevant theory of consumption. It is assumed that the consumer's budget constraints are:

$$\sum_{t-1}^{T} C_t/(1+r)\text{^}(t-1) = \sum_{t-1}^{T} C_t/(1+r)\text{^}(t-1)$$

Simple explanation: r in the formula is the discount rate. Because consumers want to own the ultimate utility is maximized, so to all types of consumer regroup, let U (C 1, C2..., CT) optimized to meet the wishes of consumers. Then according to the calculation method of finding the optimal value, the next function is to find the extreme value:

$$L(C_1, C_2, \ldots\ldots C_T, \lambda) = U(C_1, C_2, \ldots\ldots C_T) +$$
$$\lambda(\sum_{t-1}^{T} Y_t/(1+r)\text{^}(t-1) - \sum_{t-1}^{T} C_t/(1+r)\text{^}(t-1)$$

The extreme value condition of the above formula:

$$\partial L/\partial C_t = \partial U/\partial C_t - \lambda/(1+r)\text{^}(t-1) = 0$$

$$\partial L/\partial \lambda = \sum_{t-1}^{T} Y_t/(1+r)\text{^}(t-1) - \sum_{t-1}^{T} C_t/(1+r)\text{^}(t-1) = 0$$

Solving the above system of equations, the result is the optimal consumption function:

$$C_t = \alpha_1 Y_t + \alpha_2 A_t + u_t$$
$$t = 1,2,\ldots\ldots T$$

The letters represent the meaning of the formula : A , asset inventory at a time point t value ; The range of values is : 0 <a 1 <1, which refers to the present value of the marginal consumption propensity; 0 <a, z> 1 , which represents the impact of all the wealth accumulated by consumers on current consumption. Simple conversion of the formula is:

$$C_t / Y_t = \alpha_1 + \alpha_2 A_t / Y_t$$

The parameters of formula can be estimated by an equation based on a single formula, but it does not involve the age factor, because we assume that under other conditions are the same, residents' consumption behavior will be different because of age differences. Therefore, the formula needs to be appropriately modified.

For the selection of variables, some changes have been made on the basis of the predecessors. Most scholars choose the consumption level as the explanatory variable. In this article, the consumption rate of residents (CS) is used as the dependent variable, and in order to prevent some problems from occurring. For example, for multicollinearity, the choice of independent variables has also been adjusted. Instead of choosing income growth rate Y, the logarithm of GDP per capita is used instead. In terms of population age structure factors, the elderly dependency ratio (ODR) and the child dependency ratio (GDN) were selected as independent variables. Among them, because the raising of children will cause pressure on the consumption of the elderly, CDN is used as an auxiliary variable indicator. Because Chinese residents are more cautious about consumption, and will consider changes in many factors in the past and the future, this paper will also include the consumption GR that lags behind by one period. In the current development of China's economy, interest rate (R) is also a factor that cannot be ignored, because interest rate will have an impact on household savings, which indirectly affects household consumption, so it is also considered. According to the above derivation, it can be concluded that the estimated equation is now:

$$CS = \alpha_1 + \alpha_2 LNGDP + \alpha_3 ODR + \alpha_4 CDN + \alpha_5 R$$

The establishment of this simple model is to provide a foundation for future analysis, provide theoretical support, and study and analyze how much impact the aging population will have on residents' consumption and the direction of the impact.

4.4.2 Related data processing and description

(1) Variable description and data source

①Explained variable: This article selects the resident consumption rate (CS) as the

dependent variable. This paper mainly discusses the impact of population aging on residents 'consumption, so consumption other than residents' consumption is not taken into consideration. All resident consumption rate data in this article were selected from the "China Statistical Yearbook 2016 " and calculated slightly. The specific data used for the ten years from 2006 to 2015, the specific algorithm is to divide the resident consumption by Obtained from GDP data calculated by the expenditure method.

②Explanatory variables: The main independent variables in this paper are the following: logarithm of GDP per capita (LNGDP), old age dependency ratio (ODR), children dependency ratio (GDN), real interest rate (R). Originally, per capita income should be selected as the explanatory variable, but per capita income is a bit complicated to calculate and is prone to errors. Therefore, this paper chose per capita GDP as the substitute variable. GDP may have an excessive impact on household consumption. To counteract this effect and to prevent multicollinearity, we calculate the logarithm of GDP per capita, and because the price changes are different every year, we It is necessary to de-float the price. In this article, we will select the LNGDP calculated from the constant price in 2006 as the base period to the 10 years until 2015. Through the "China Statistical Yearbook 2016 ", the original data of the elderly dependency ratio (ODR) and the child dependency ratio (ODN) were selected. In this paper, the actual interest rate is selected as the independent variable. The data mainly comes from the calculation method of "China Financial Statistics Yearbook" which is obtained by the difference between the nominal interest rate and the inflation rate. The nominal interest rate is calculated by weighting the one-year fixed deposit interest rate and the adjustment time, and the inflation rate is compiled by the consumer price index (CPI) over the years.

(2) Statistical description of data

The main purpose of this paper is to study the impact of population aging on household consumption, according to the availability of data to calculate the relationship between the consumption rate of other explanatory variables and selected paper, this paper is mainly used 2006-2015 year In addition to Hong Kong, Macao and Taiwan, the 10- year time series data of 31 provinces in the mainland totaled 310 sets of observations.

As can be seen from the following Table 4-6, there are great differences between the variables we finally obtained. The reasons for this may include regional differences in the level of economic development, differences in the concept of residents in different regions, and differences in aging regions. The average consumption rate of residents is 34.6123, and its variation range is 21.73%-60.46%; the average logarithm of GDP per capita is 10.32%, and the variation range is 8.66-11.59; degree of aging the average value is 12.46%, the variation range

is 6.71%-20.04%, the average child rearing ratio is 23.32%, and the variation range is 9.64%-42.22%. As can be seen from Table 4-6, the gap between Chinese provinces is very large, so the data is very different.

Table 4-6 Variable meaning and statistical description (%)

variable	Variable meaning	Observed sample size	average value	Standard deviation	Maximum	Minimum value
CS	Resident consumption rate	310	34.6123	5.9565	60.46	21.73
LNGDP	Log of GDP per capita	310	10.3296	0.5887	11.59	8.66
ODR	Old-age dependency ratio	310	12.4675	2.5074	20.04	6.71
CDN	Child dependency ratio	310	23.3284	6.7469	42.22	9.64
R	Real interest rate	310	0.002	1.63	2.95	-2.12

Source: China Statistical Yearbook 2008-2016。

4.4.3 Time series empirical analysis

(1) Unit root test

Because the data used in this article is time series data, some problems may occur, for example, the more serious is the possibility of pseudo regression, so before the analysis, first perform a unit root test to see if the analyzed series is stable. This article uses the measurement software Eviews7.2 for inspection, the specific inspection results (Table 4-7).

Table 4-7 ADF stability test results

variable	ADF-FISHER CHI-SQUARE value	P value	test result
CS	66.6109	0.3214	unstable
LNGDP	151.429	0.0000	stable
ODR	57.0853	0.6529	unstable
CDN	86.2207	0.0227	stable

R	56.195	0.6928	unstable
D(CS,1)	131.351	0.0000	stable
D(LNGDP,1)	206.013	0.0000	stable
D(ODR,1)	149.204	0.0000	stable
D(CDN,1)	127.957	0.0000	stable
D(R,1)	132.144	0.0000	stable

represent the first-order difference of variables。

Note: D (CS, 1), D (LNGDP, 1), D (ODR, 1), D (CDN, 1), D (R, 1)

From the test results of ADF in Table (4-7), it can be seen that the two p- values of LNGDP and CDN in the variables CS, LNGDP, ODR, CDN, R can meet the requirement of 5% significance level and are stable. But the other three variables cannot meet the requirement of 5% significance level, so they are not stable. However, after the first-order difference of the variables, all of them can meet the requirements, and they are all stationary sequences. Therefore, these five variables can be regarded as first-order single-integer sequences, that is, I.

(2) GLS estimation results and analysis

After the GLS estimation of the measurement software eviews7.2, the estimation results in the following Table 4-8 are obtained: each variable calculated can well explain the household consumption rate (CS), and the significance is relatively high, reflecting the robustness of the model Sexuality is good. According to the regression results in Table 4-8 : among them, residents have some necessary consumption, and their proportion of total consumption of residents is shown in the constant part ; when the per capita GDP (LNGDP) is increased by one percentage point, the residents' consumption rate will reduce 0.125%; the elderly dependency ratio of the population (ODR) in the case of each one percentage point increase, will make the consumption rate decreased by 0.725%。

Table 4-8 Panel data GLS estimation results

Explanatory variables	Coefficient estimate	Standard deviation	T statistic	P value
constant	0.039000	0.087393	4.462586	0.0000
LNGDP	-0.12493	0.718642	-0.271246	0.0071
ODR	-0.752424	0.012029	6.254743	0.0000
CDN	0.102920	0.006361	4.290114	0.0000
R	0.000826	0.002317	0.326802	0.00020
R^2	0.9486			

F statistic	256.39	F statistic P value	0

According to the empirical analysis, we conclude that : LNGDP will cause the rate of decline in household consumption, and according to estimates derived 5% on a significant level, it simply corresponds to reality, and it is when the increase in income residents, The resident consumption rate does not increase but declines , reflecting that people's extra income may be mostly used for saving rather than consumption, which is consistent with the traditional virtue and prudent consumption of the Chinese residents who assumed the "dusty and frugality" that we assumed earlier . Of course, this is also related to China's current economic situation, because at this stage housing prices are rising, people may be more inclined to save to buy a house, plus, people are paying more and more attention to health status, health care costs have risen repeatedly, residents may Will plan ahead , increase savings and reduce consumption.

On the other hand, the child dependency ratio (CDN) changes in the same direction as the household consumption rate. When the child dependency ratio (CDN) decreases by one percentage point, the household consumption rate will decrease by about one percentage point, and it is significant at the level of 1%, reflecting that the consumption level of Chinese residents will decrease as the birth rate decreases. Possible reasons: first, because the birth rate of babies is reduced, the family ’s expenditure on babies will inevitably decrease; second, the traditional Chinese concept believes that the children ’s offspring is one of the keys to old-age care. background, residents may be more inclined to consume less and save more, use to future pension; and finally, the residents will increasingly pay attention to their children's education. In order to keep the kids, lose at the starting line, so most families have opted for education savings.

The factor of population aging is the main key of this paper. From the GLS estimation, the increase of the dependency ratio of the elderly population is one of the main factors to reduce the consumption rate of residents. When the elderly dependency ratio (ODR) for each one percent increase in household consumption rate will drop 0.75 percent, and there are very good statistically significant. The conclusions drawn in this article are completely opposite to the life cycle hypothesis of the famous economist Modigliani. The main reasons are as follows: First of all, the elderly today tend to consider for future generations and do not want to cause trouble to their children. Due to the deterioration of physical functions and the high prevalence rate, the elderly group is more willing to reduce consumption ; secondly, after retirement, the elderly do not have to participate in entertainment activities and leave the original communication circle, so the consumption for social entertainment and drinking decreases, At present, young people are not willing to participate in recreational activities, and they are more inclined to

casual activities, such as reading newspapers, playing chess and walking . Finally, due to the weak economic foundation in China, the current social security system and medical pension system are not very sound, so the elderly group will consume more carefully to prevent future uncertainties. In summary, the three main factors that lead to changes in the consumption preferences of the elderly group, habits that focus on future generations, and the imperfection of China ’s social pension medical security system lead the elderly group to save more and reduce consumption, which is also better. Shows that the aging population will have a certain negative impact on residents' consumption.

4.4.4 Grey correlation analysis of population aging and residents' consumption structure

(1) Grey correlation analysis (GRA) is widely used to study the degree of influence between similar or dissimilar factors. After the selected time series data is plotted, corresponding curves will be formed, and then the closeness of the relationship between the research factors will be judged based on the similarity of the geometric shapes of these curves. Gray correlation analysis is mainly to study whether there are mutual influence relations between several sequences. It mainly studies the relationship between orders. The size of the correlation value is not actually a key factor, because it is mainly a quantitative analysis and is based on development trends. It is not necessary to measure whether the sample size is typical or not. One of the most suitable factors for empirical evidence is that he is very simple to calculate and not easy to make mistakes.

At this stage, China has already entered a well-off society, and the problem of food and clothing has been resolved, so people no longer have to worry about survival materials. Just as China 's main contradictions have changed, the issues that people are now concerned about are no longer Survival, but more inclined to enjoy, development. Next, the 2006-2015 time series data is used as a sample to analyze the impact of population aging on residents' consumption structure.

Let Y1 = total dependency ratio, Y2 = elderly dependency ratio, X1 = proportion of food expenditure, X2 = proportion of clothing, X3 = proportion of household equipment and services, X4 = proportion of medical care, X5 = proportion of transportation and communication, X6 = proportion of education and cultural entertainment services, X7 = proportion of residence, X8 = proportion of other goods and services. Where Y1, Y2 are reference sequences, X1, X2, X3, X4, X5, X6, X7, X8 are reference sequences.

The following uses the data compiled by the urban and rural elderly population (65 years old and above) in the 2006-2015 China Statistical Yearbook (urban and rural annual

consumption expenditure multiplied by the proportion of urban and rural elderly population in each year to obtain the overall national consumer consumption composition For the data, the gray correlation system theory modeling software was used to analyze the data of the eight consumption expenditure ratios and the old-age dependency ratio, and the coefficients were obtained. The results are shown in Table 4-9.

Table 4-9 Gray correlation analysis results

Deng's correlation	Food expenditure	Clothing expenditure	Household equipment supplies and services	medical insurance	Traffic communication	Educational and cultural entertainment services	Living expenses	Other goods and services
	XI	X2	X3	X4	X5	X6	X7	X8
Y1	0.4759	0.5289	0.5758	0.5604	0.5913	0.5963	0.6936	0.6092

(2) Empirical analysis

Analysis calculated by gray correlation can be seen from the result: correlation coefficient (Y1, X7)> (Y1, X8)> (Y1 , X6)> (Y1, X5)> (Y1, X3)> (Y1, X4)> (Y1, X2)> (Y1, X1) , It shows that in the past ten years from 2006 to 2015, the order of magnitude of the impact of the elderly aged 65 and above on the demand for eight categories of consumer goods is： X7 (live), X8 (other goods and services), X6 (cultural and educational entertainment supplies and services), X5 (transportation), X3 (household equipment supplies and services), X4 (medical health care), X2 (clothing), X1 (food). Let's make a specific analysis below:

①The impact of China's aging population on housing. China began to fully implement the family planning policy in the 1970s, and it was strictly implemented in the 1980s, and became a basic national policy of China. In the context of that time, the family planning policy-controlled China's overall population base and made an indelible contribution to China's economic development. However, at present, the "post-80s" have basically entered the society to start work and get married. Young children who have just stepped into the society, because of their short employment time and limited income, and when they reach the age of marriage, the demand for houses has become a rigid demand, and now more elderly people choose to separate from their children with the change of consumption concept Live, but young children want to own a house in the city is difficult, most of them need to rely on their parents to help.

With the increasing proportion of China's aging population in recent years, and the old people's traditional concept is relatively deep, so most of the elderly will use their savings to purchase housing for their children or pay the housing down payment. At the same time, housing prices in China have been rising and rising in the past ten years, and have been in a state of increasing. Therefore, the consumption expenditure of the elderly on housing needs is relatively high.

②The impact of China's aging population on culture, education and entertainment. As seniors retire, the social circle will gradually shrink and become narrower. Perhaps many seniors are not very comfortable at first, and they will continue to seek solutions to adjust their mentality and make themselves healthier. With the continuous development and expansion of various entertainment activities and entertainment facilities, the elderly, because they have a lot of leisure time, mostly actively participate in various cultural and recreational activities, such as usually do not have much to read, read more newspapers, and friends Playing chess, playing ball, etc. And with the development of today's society and economy, the development of tourism is particularly impressive. Older people have no time to spend leisure time and play because they are tight during work. After retirement, the elderly is different. There are no restrictions on work, and they have a lot of leisure time. Therefore, many elderly people choose to travel and relax. Because there is no time limit, the number of travels of the elderly will be very frequent, and most of them will choose long-distance travel in different places, such as traveling abroad. Therefore, whether the elderly participate in cultural and recreational activities to exercise their physical fitness, or choose to go out and relax, this increases the consumption expenditure of cultural and educational entertainment.

③The impact of China's aging population on transportation. Because of the implementation of the family planning policy, most of the current family sizes are small-scale families. There are only one or two children in the family. Parents will spoil their children. Many parents will buy vehicles for their children in addition to buying houses for their children. After all, vehicles are also a big expense, and young children can't afford it just after work. Moreover, most parents live separately from their children, and most of the contact methods use mobile phones, computers, and other communication tools. With the development of the economy, this type of expenditure is relatively high. Moreover, the elderly travel abroad to relax, especially when traveling to remote areas. Air travel is indispensable. Therefore, expenditures on transportation and communications are also increasing with the development of society.

④The impact of China's aging population on health care. With economic development and social progress, people's concept of health and wellness is gradually increasing. Because of age, the physical functions and immunity of the elderly continue to decline. The probability of

illness is also much higher than that of other age groups, so the elderly People will pay more attention to their own health. In recent years, more and more brands and companies of health products have appeared in the society, and the quality is mixed. However, the market for health care products and medical devices for the elderly is getting larger and larger. The key factor is that the elderly is the demand for functional health products, vitamin supplements, calcium and other health products is increasing, and in addition to purchasing health products and calcium health products in order to pursue health care, the elderly will also spend a lot of money. Buy a series of medical equipment such as massage chairs and pedicures at a price. The elderly pays more attention to their own health care because of their age. They hope to purchase medical equipment and health products to adjust their physiological functions, which has achieved the purpose of making their home healthier and longer. Although the current health care market seems to be developing relatively well, many medical devices, health products, etc. are priced too high due to weak supervision and other reasons, so I think that the elderly have already spent a high cost of medical health care products On the basis, it also increased the consumption expenditure of the elderly in health care.

⑤The impact of China's aging population on food and clothing for residents. As the age of the elderly increases, due to some physical effects, the demand for food for the elderly group is low, and there are few foods specially made for the elderly group on the market. After reaching old age, people like to shop around, especially for some foods and vegetables, they will choose relatively good and cheap, which is why the elderly are more frugal. After the elderly retire, they no longer need to be entertained, because they need a variety of social interactions to invite people to dinner, participate in wineries, etc., which also reduces food consumption. Of course, because of the improvement of living conditions and the superior economic conditions, food expenditure has already taken up a smaller and smaller part of consumption. The situation is similar for clothing. The improvement of economic conditions makes the proportion of clothing expenditures smaller and smaller, and in the middle-aged and elderly clothing market, no matter the variety, style or quantity is relatively small, so it also reduces the elderly's demand for clothing. In addition, due to retirement at home, the social circle is small, and the demand for clothing is also small. The elderly themselves do not have much hobby tendency to purchase a large amount of expensive clothing. In summary, the correlation between consumption of clothing and food and the elderly is relatively small.

4.4.5 Summary of this chapter

In summary, this chapter concludes that at this stage in China, the rapid development of the aging population may have a negative impact on consumption.

After empirical testing in two aspects of this chapter, through the use of data from 2006 to 2015, the corresponding results are obtained. Empirical time series data shows that the increase of the old-age dependency ratio will reduce the level of residents' consumption rate. Correlation analysis, the increasing aging will for living expenses, health care and education and entertainment areas have a greater impact.

Chapter 5 DISCUSSION AND CONCLUSION

5.1 Conclusions

Through the above empirical research results, the first sequence using empirical data in 2006 and 2015 between the use of consumption function consumption rate and empirical elderly dependency ratio, as a result of population aging on consumer direction and size have very Big influence. The second kind of empirical study is that the gray correlation model uses the serial data from 2006 to 2015 for nearly ten years, involving the two factors of old-age dependency ratio and the eight major consumption expenditures. The correlation analysis between the mother sequence and the child sequence is carried out. Related results:

(1) GDP growth rate, the elderly dependency ratio and the child dependency ratio will produce on the consumer level some impact, but the GDP impact of growth on the consumption level significantly the negative correlation closed system, and child dependency ratio generated on the consumer level of the positive correlation. This may show that Chinese residents have a deeper traditional thinking, that the economy is wealthy, and that excess money is used for savings rather than consumption, so the consumption level does not rise but declines. An increase in the child dependency ratio will increase residents' consumption levels, but a lower fertility rate will vice versa.

(2) The aging of the population to the level of consumption would produce raw adverse impact. That is to say, through the calculation results, this paper preliminary estimates that the aging population will reduce the consumption level of residents, and it is very obvious that the two are inversely related.

(3) The aging population also will affect the structure of consumption. From the perspective of the correlation coefficient between the old-age dependency ratio and the eight types of consumption structure, the aging population ranks first and third respectively for the residents' living expenditure consumption and cultural, educational and entertainment expenditure consumption, and other remaining consumption in terms of expenditure, the impact is even greater. In reality, in recent decades, the demand for housing among the elderly population in China has been relatively high, and with the improvement of economic conditions, more attention has been paid to cultural entertainment.

(4) From the correlation coefficient between medical care and elderly dependency ratio, the higher the expenditure of the elderly in medical care, the less the medical care market can meet the needs of the elderly population. The current health care system is still not perfect, elderly health care products market system still needs further specification. Moreover, the

problems of "difficult to see a doctor" and "expensive to see a doctor" have not been solved well, and some other problems in the elderly market have also been bred.

5.2 Policy recommendations

China's aging is deepening, the aging process is accelerating, and the age structure of people is constantly changing. Because the consumption needs, consumption psychology and personal income of the elderly are constantly changing due to age, the overall demand structure of society A series of changes followed. The demand structure determines the consumption structure, and the consumption structure will further affect the industrial structure. The aging population is inseparable from the economy of the entire society. Based on this, this article makes a statistical description and analysis of the current situation of China's aging problem, and combined with empirical research, understands that as the population aging deepens, the consumption structure shifts from survival-oriented consumption to the development of hedonic consumption. Measures can be taken from the following aspects to address the impact of China's aging population on consumption structure:

5.2.1 Create a policy environment suitable for the elderly from the government level

(1) Increase transfer payment and implement a new pension system.

At present, most of the elderly population in China was born in the 1940s and 1950s. Because they were born in a relatively backward stage of China’s economic development, they also experienced three years of natural disasters and political turmoil. The social security system at that time was not perfect, resulting in the retirement of this generation. After that, pensions are generally low, basically adopting the "family pension" model, which brings a heavy burden to the family. Therefore, this part of the consumption of elderly consumers is relatively affected by income, and it is not conducive to the upgrading of the social consumption structure. At the same time, social security in rural China started later than in cities, and the problem of old-age care for the elderly in rural areas is also more prominent.

In view of the problem of uneven social security in regions and regions, the Chinese government needs to play the role of financial redistribution. For rural areas or provinces and cities where social security started late, the emphasis on aging will be increased. If necessary, it can be targeted. Sexual endowment subsidies are given to elderly families or senior citizens with financial difficulties or who have completely lost their ability to move. Give full play to the elderly care in the community and mobilize volunteers to care for the elderly and widowed elderly in the community At the same time, the government should correctly guide social

capital's investment in the pension industry, encourage social capital to enter the pension service industry, and adopt a multi-integrated pension financing model from the society to the collective to the individual to meet the growing demand for elderly services.

(2) Regulate the market for elderly products and prevent the market from developing abnormally.

Due to the lack of industry standards, market norms, evaluation systems and industry regulatory agencies, the quality of products and services of aging supplies companies cannot be evaluated and supervised. The production enterprises lack design standards and specifications, especially the safety design of elderly people's daily life and the specific product design specifications of old-age supplies. In recent years, the consumption level of the elderly has gradually increased, but due to the lack of necessary supervision in the elderly product market, the number of complaints against the elderly products is on the rise. For example, in the health care product market, with the deepening of aging, the elderly has become the main consumers of health food. Sales of health food products in China reached 200 billion yuan in 2017, and half of the consumers are elderly. However, the market for health food is extremely confusing, with false propaganda and even cases of deceiving the elderly to buy health products at high prices. Taking advantage of the old people's great concern for their own bodies or the limited knowledge of the old people, they carry out a "brainwashing" product sales model; another example is home care, China's elderly home care industry is not yet perfect, and the professional level of its caregivers There is no corresponding evaluation standard, and the continuous miniaturization of the family structure causes the elderly to live mostly alone. There are no other family members to supervise the caregivers, and the home care level of the elderly and even the safety of the elderly cannot be guaranteed.

The government should play a leading role, guide the scientific, reasonable and efficient development of related industries, formulate relevant management policies and regulations, gradually standardize the market for elderly products, and strengthen market supervision, as well as health foods, health drugs, and furniture that are frequently problematic in elderly products Nursing and other industries implement regular spot checks to prevent the abnormal development of the elderly product market.

(3) Reasonable population policies to slow down the aging process in China.

The fundamental reason for the aging population is that the proportion of the elderly population in a country and region in the total population is increasing, and the proportion of the elderly population to the working-age population is increasing. To slow down the elderly

population, it is necessary to increase the proportion of the working-age population. In China, the population is greatly influenced by population policies, and the accelerated aging of the population is a formal issue of China's population policy (family planning policy) due to artificial and abnormal population control. The excessively tight birth policy has caused a rapid decline in the birth rate. With the continuous improvement of living standards and the continuous improvement of medical conditions, the population mortality rate has decreased year by year with the improvement of medical and health conditions, and the degree of aging has continued to deepen. If the policy is not adjusted in time, it will be difficult to reverse the mismatch between China's population structure and economic structure, which will lead to a more tense situation in the country's "triangular" population structure.

Therefore, to slow down China's aging process, we should start with improving fertility. The government should appropriately continue to relax the fertility policy, and at the same time provide corresponding welfare policies for family births and female re-employment after birth, and encourage national births. However, it should be noted that the relaxation of the birth policy may increase the overall support burden of the labor force in the short term, causing social pressure; at the same time, the result of further relaxation of the birth policy may be better economic conditions and more public resources. Urban young people still choose to be infertile or have fewer births, and those areas with economic backwardness are more trapped in the vicious circle of "the poorer the better, the worse the worse" due to the old concept of fertility. In this way, although young people generally have more children and lower the ratio of the elderly population, the population structure has deteriorated further.

(4) Focus on economic construction to adapt population to economic development.

According to the theory of demographic transition, the development of population reproduction should be compatible with economic development. The problem of population aging in China is more serious than that of traditional developed countries. The reason is that the speed of China's economic development has been seriously lagging behind the speed of population transformation. Only when the speed of economic development remains above the speed of population aging can the problem of population aging be alleviated, otherwise it will fall into a vicious circle of economic stagnation and population aging.

China is currently at a critical stage of economic restructuring. The "demographic dividend" is gradually disappearing. The traditional investment and cheap labor force model of economic growth has been fatigued, while the problem of population aging has also become a serious impact on economic development. The opportunity for economic structural transformation. The transformation of the total social demand structure brought about by the

aging of the population forces the industrial structure to continuously adjust with the demand structure, and the transformation of the consumption structure accompanying the aging of the population coincides with the transformation of the consumption structure brought about by economic growth: from Survival consumption transformation and development of hedonic consumption. The total demand structure of society is closely related to the industrial structure, which forces the transformation and upgrading of the industrial structure, which also meets the requirements of the "new normal" of China's current economic development. At the same time, population aging is the declining proportion of the labor force, which forces the continuous development of science and technology to replace the lack of labor. Population aging is not only an economic and social problem to be solved, but also an opportunity for economic and social development. Seizing the opportunity of economic transformation and focusing on economic development, adapting the economy to the age structure of the population is the fundamental solution to the problem of aging.

5.2.2 Establish a market environment that meets the needs of the elderly from the enterprise level

(1) Attach importance to the elderly market and vigorously develop the pension industry.

According to the measurement estimation results, the positive effect of health care expenditure caused by the aging of the population is the most obvious. Therefore, when China's economic development lags behind the demographic transition today, and the consumption capacity of the elderly is limited, relevant enterprises should pay more attention to The construction and development of healthcare-related industries; on the other hand, the reduction in consumption expenditures on food and clothing caused by the aging of the population not only means that the elderly demand for food and clothing is reduced. Although in absolute terms, the food intake of the elderly is less than that of the youth, and the clothing is no longer the primary pursuit of fashion and beauty, but more emphasis on practicality, but the reduction in consumption expenditures on food and clothing is more from the current elderly food Due to the imperfection of the apparel market, the elderly population has special needs, but there is no corresponding supply. Relevant enterprises should quickly change the stereotype of the elderly, realize the rapid growth of the market for the elderly, seize the business opportunities in the elderly product market, and actively transform the product production structure to adapt to the new needs of an aging society.

In addition, the old-age industry-related enterprises should continue to vigorously develop the old-age industry. The so-called old-age industry is not only the old-age real estate industry, but the extension of the old-age service industry chain. The old-age ecosystem formed by

taking the old-age service as the center. Including basic-level old-age care, old-age insurance, old-age medical, etc.; extended-level old-age consumption, old-age entertainment, old-age spiritual comfort, old-age finance, etc.; environmental-level old-age scientific research and old-age concept (social culture, public opinion environment), etc. The pension industry chain is not only an upgrade of the industrial structure to the high-end service industry, but also makes up for the gap in the supply of China's public pension services, which means that social organizations, private capital and social forces participate in social affairs, thereby promoting pension and Related industries.

(2) Increase the employment of the elderly and increase their income.

According to the absolute income hypothesis and the persistent income hypothesis, consumption is largely influenced by personal income, and subject to China's social security system and income distribution system, the overall disposable income of the elderly in China is insufficient, and the consumption capacity is low, while the elderly The demand structure of the population has shifted from production and consumption to the development of hedonic consumption, which is undoubtedly a huge contradiction. Therefore, only raising the income of the elderly can calmly cope with the economic development after the transition to an elderly society. In addition to relying on the social security system and increasing government transfer payments mentioned in the previous section to increase the income of the elderly, it is more important to further develop the elderly's human resources and provide favorable conditions for the elderly to "self-support". The so-called senior human resources refer to the sum of physical strength and intelligence that the elderly can directly put into labor. Although older workers are physically inferior to younger workers, they have rich labor experience, and the development of senior human resources is conducive to solving the phenomenon of talent disconnection and talent disconnection; as China's average years of education increase, knowledge is acquired The difficulty increases and the time for laborers to participate in labor for the first time is pushed back. It is even more important to develop and utilize the human resources of elderly laborers.

However, at present, there are not many positions suitable for the elderly in Chinese enterprises, and most enterprises have shown different levels of age discrimination; and after retirement, the elderly and the employer cannot sign regular labor contracts to define the rights and obligations of both parties. Both bring certain troubles. The aging is getting more and more serious, more and more old people who can work and produce but are in retirement age return to work. Enterprises should make use of the old man's labor resources, especially the accounting and teachers with "one skill". Job positions with work experience; need to be more cautious about the signing of employment contracts for the elderly labor force, to avoid the

participation of the elderly in work intensity that is not suitable for their physical condition, and to fully develop and utilize the elderly's human resources.

5.2.3 Construct a social environment suitable for the life of the elderly from the social level

(1) Change the mentality of "talking about old age" in society and actively face the problem of aging. At present, people mention "aging" as "severe disgust". Due to the experience of developed countries, people realize that a series of social problems such as increased social burden caused by aging, weakened family pension function and insufficient labor force will seriously affect economic development, and may even stagnate economic development. Not forward. But "ageing of the population" is one of the side effects brought about by economic development. According to the experience of developed countries, as economic development rises to a certain level, aging is inevitable. Although aging is larger and faster due to China's special national conditions, since it is inevitable, it should be confronted with a more positive attitude. On the one hand, "positive" refers to the social application of a peaceful mind to face the reality of population aging; on the other hand, the "positive" emphasis on the elderly population is to continue to participate in social, economic, cultural and public affairs, after retirement Able to remain an active contributor to their relatives, friends, communities and the country.

There is a not-so-friendly trend of thought in the society: it is believed that the elderly can only become a burden on society, no matter how much they have contributed to the society, but the physical function of the elderly declines and the ability to think is reduced, it is no longer possible for the family And life brings gain. The so-called "active aging" is holding the opposite view: the elderly is neglected social resources. With the improvement of living standards and medical conditions, although the elderly can no longer engage in heavy manual labor, they do not hinder them at all. Healthy participation in social and economic, public and family affairs, on the contrary, the elderly can use their rich work and life experience to create wealth in society and bring positive effects to the healthy development of social economy. As a side effect of economic development, aging cannot be completely avoided. Since it is inevitable, a positive attitude should be adopted to deal with the problem of aging. It should be accepted by the public rather than regarded as a "tumor".

(2) Transform the social atmosphere and build a social environment for pension, filial piety and respect for the elderly. General Secretary Xi Jinping put forward in the report of the Nineteenth National Congress of the Communist Party of China: "actively respond to the aging of the population and build a policy system and social environment for pension, filial piety and respect for the elderly." Aging is a challenge and an opportunity. The elderly are not social

burdens, but social resources. The speed of China's economic development cannot keep up with the speed of population aging, which leads to a shortage of old-age services. In the absence of social old-age services, the elderly cannot rely solely on the old-age resources provided by the government. At this time, constructing a socialized environment for pension and respect has become a major way to solve the problem of aging. Only by advocating the “self-support” of the elderly, rational use of social resources, and the flow of resources to more important areas of strategic development can fundamentally solve the problem of insufficient elderly service needs. For example, replacing some of the social welfare and old-age care institutions with mutual assistance and old-age care. The so-called mutual assistance and old-age care is a mutual assistance activity between families, families, neighborhoods, and community members in life care, spiritual comfort, etc., and its helpers are mainly young and healthy old people. The recipients are mainly senior citizens, frail elderly and solitary and empty nest elderly. The uneven development of China's urban, rural and regional pension systems is outstanding. Compared with the diverse and multi-level elderly care service needs of the elderly, its effective supply is insufficient and there is a shortage of talents. It is necessary to develop the elderly's human resources through mutual assistance development. Mutual assistance for the elderly conforms to the traditional culture of mutual assistance in China, and the establishment of a social environment for the elderly, filial piety, and respect for the elderly is easy to be accepted by the society. Today, a mutual assistance environment for the elderly is more conducive to saving social resources and at the same time saves the elderly a large amount of medical service expenditure, which helps to rationalize the consumption structure of the elderly.

5.3 Prospects

The problem of population aging has been a hot topic in academic research for a long time, but over the years, no conclusion has been drawn about the economic impact of population aging. Although this article has been considered in a comprehensive and detailed manner, and has also passed a simple test of its own empirical, but due to my low academic level, limited personal ability and knowledge, the research time is also a little hasty, and there are still many deficiencies in the article Offices and places that require in-depth research and improvement. Although there is a certain amount of reading for Chinese and Western literature, due to the limited English level, the understanding of English literature is not very deep, especially the previous theory and literature review modules. Many classic works are limited to superficial understanding. This is the need for improvement and Perfect. In order to make the statistical data of the paper consistent, the data in this article mainly come from "China Statistical Yearbook 2016 ". Due to the limited selection of variables, especially the statistical yearbook data on the eight major consumer expenditures have some display changes, which hinder the availability and I have problems with my own calculation method, so the data

processing is not very perfect, which also needs improvement and improvement. I believe that with the continuous advancement of time, China's statistical data and methods are continuously supplemented and improved, the number of sample selections can be continuously increased, and the model can be further revised, so that the empirical results will more closely match the actual situation.

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